DOCUMENT RESUME

ED 288 542 IR 052 209

AUTHOR	Harriman, Sigrid G., Ed.
TITLE	Toward a Common Vision in Library Networking. Proceedings of the Library of Congress Network Advisory Committee Meeting (Washington, D.C., December 9-11, 1985). Network Planning Paper No. 13.
INSTITUTION	Library of Congress, Washington, D.C. MARC Development Office.; Library of Congress, Washington, D.C. Network Development Office.
REPORT NO	ISBN-0-8444-0534-5
PUB DATE	86
NOTE	93p.; For Network Planning Paper No. 12, see ED 270 116.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Viewpoints (120)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Academic Libraries; *Information Science; *Library Automation; *Library Cooperation; *Library Networks; Library Planning; Library Services; National Libraries; *National Programs; Position Papers; Public Libraries; Regional Cooperation; Research Libraries; *State Libraries; Users (Information)
IDENTIFIERS	*Library of Congress

ABSTRACT

The December 1985 program session of the Library of Congress Network Advisory Committee (NAC) focused on determining the effectiveness of networking, identifying a common vision or goal, and developing a strategy to accomplish that goal. The program session included remarks on the role of the regional networks in national networking by Louella V. Wetherbee; a consideration of RLG (Research Libraries Group) in a nationwide network by Richard F. McCoy; a discussion of state libraries in national networking by James A. Nelson; presentations by private sector representatives and local systems representatives; and an overview and comments by Ronald F. Miller. The following papers, included in their entirety, were also presented: (1) "A Common Vision--Networking for Networkers and Librarians" (JoAn S. Segal); (2) "The Nationwide Network and OCLC--A Vision and a Role" (Rowland C. W. Brown); (3) "National Libraries' Vision of the Nationwide Network and Their Role in That Network" (Henriette D. Avram, Lois Ann Colaianni, and Joseph H. Howard); and (4) "A User's View of Networking" (Barbara D. Cooper). Also included are a list of conference attendees and summaries of NAC questionnaire responses, working group discussions, and the business session. A definition of networking, basic premises underlying library networking, questions for the NAC, and the conference agenda are appended; and a 12-item bibliography is provided. (KM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Library of Congress Cataloging-in-Publication Data

Network Advisory Committee. Meeting (1985 Dec. 9-11 :
Washington, D.C.)
Toward a common vision in library networking.

(Network planning paper, ISSN 0160-9742 ; no. 13)
Bibliography: p.
1. Library information networks--United States--
Congresses. 2. Library cooperation--United States--
Congresses. I. Library of Congress. Network
Development and MARC Standards Office. II. Title.
III. Series.
Z674.8.N46 1985a 021.6'5'0973 86-600106
ISBN 0-8444-0534-5

NETWORK PLANNING PAPER NO. 13

Toward a Common Vision in Library Networking

Proceedings of the
Library of Congress Network Advisory Committee Meeting
December 9-11, 1985

Network Development and MARC Standards Office
Library of Congress
Washington

1986

CONTENTS

FOREWORD 1

ATTENDEES 3

INTRODUCTION 5

PROGRAM SESSION 9

A COMMON VISION: NETWORKING FOR NETWORKERS AND LIBRARIANS, JoAn S. Segal 9

THE NATIONWIDE NETWORK AND OCLC: A VISION AND A ROLE, Rowland C. W. Brown 19

RLG IN A NATIONWIDE NETWORK, Richard F. McCoy 31

NATIONAL LIBRARIES' VISION OF THE NATIONWIDE NETWORK AND THEIR ROLE IN THAT NETWORK, Henriette D. Avram, Lois Ann Colaianni, Joseph H. Howard 35

REMARKS ON THE ROLE OF THE REGIONAL NETWORKS IN NATIONAL NETWORKING, Louella V. Wetherbee 41

STATE LIBRARY IN NATIONAL NETWORKING, James A. Nelson 47

SUMMARY OF PRESENTATIONS FROM PRIVATE SECTOR REPRESENTATIVES 49

SUMMARY OF PRESENTATIONS FROM LOCAL SYSTEMS REPRESENTATIVES 54

A USER'S VIEW OF NETWORKING, Barbara D. Cooper 59

NETWORKING QUESTIONNAIRE: SUMMARY OF RESPONSES 65

SUMMARY OF WORKING GROUP DISCUSSIONS 73

OVERVIEW AND COMMENTS, Ronald F. Miller 77

BUSINESS SESSION 87

APPENDIXES

A. Definition of Networking and Basic Premises Underlying Library Networking and Questions for NAC 91

B. Agenda 93

FOREWORD

The identification of key issues in the networking field at the May 1985 meeting of the Library of Congress Network Advisory Committee (NAC) led to continued deliberations toward a common vision in nationwide networking and the development of a plan to realize it during the December 1985 NAC program session. Invited speakers representing the bibliographic utilities, national and state libraries, regional networks, the private sector, local systems, and the users of libraries presented their visions of the nationwide network and the roles of their organizations in that network.

Particular thanks are due to the members of the Program Planning Subcommittee--Frank P. Grisham (chair), Toni Carbo Bearman, Betty A. Davis, Carol C. Henderson, Laima Mockus, and Joseph F. Shubert--for their efforts to make the meeting a success. The Program Subcommittee joins me in thanking all those who prepared papers and gave presentations at the meeting. Papers and summaries of those presentations are contained on the following pages.

This document has been issued as proceedings of the Library of Congress Network Advisory Committee meeting within the Network Planning Papers series. Sigrid G. Harriman has edited the proceedings. Again, the papers presented at the meeting were not retyped for consistency, in the interest of timeliness. The opinions expressed are those of the speakers and do not necessarily represent the opinions of their organizations.

Henriette D. Avram
Chair, Network Advisory Committee

May 17, 1986

ATTENDEES

Organizations	Representatives
American Library Association	Joseph F. Shubert
American Society for Information Science	Ward Shaw
AMIGOS Bibliographic Council	Louella V. Wetherbee
Association of Research Libraries	William J. Studer
Bibliographical Center for Research	David H. Brunell
Chief Officers of State Library Agencies	Fay Zipkowitz
Cooperative Library Agency for Systems and Services	Ronald F. Miller
Council on Library Resources	C. Lee Jones
Federal Library and Information Center Committee	James P. Riley
Information Industry Association	Brett Butler
Institute for Scientific Information	Thomas G. DiRenzo
Library of Congress	Henriette D. Avram Sigrid G. Harriman (Secretariat)
Medical Library Association	Erika Love
Minnesota Interlibrary Telecommunications Exchange	William DeJohn
National Agricultural Library	Pamela Q. Andre
National Commission on Libraries and Information Science	Toni Carbo Bearman
National Library of Medicine	Lois Ann Colaianni
NELINET, Inc.	Laima Mockus
OCLC, Inc.	Mary Ellen Jacob

Organizations	Representatives
Research Libraries Group, Inc.	C. James Schmidt
Southeastern Library Network	Frank P. Grisham
Special Libraries Association	Bette Dillehay
Universal Serials & Book Exchange, Inc.	Mary W. Ghikas
University of Chicago	Charles T. Payne

Observers	
American Association of Law Libraries	Betty Taylor
American Library Association	Carol C. Henderson
Association of American Publishers	Richard Kleeman Donna Sanzone
Association of Research Libraries	Susan K. Martin
Information Industry Association	Betty A. Davis
Library of Congress	Sally H. McCallum Sandra Milevski
National Agricultural Library	Joseph H. Howard
National Endowment for the Humanities	Marcella Grendler
National Federation of Abstracting and Indexing Services	Ann Messmore

INTRODUCTION

Because of the diversity among our libraries, no single network is possible or even desirable. It is, however, both possible and desirable to identify a common vision in networking and to determine those goals that we should share. Indeed, networking needs a vision and a common understanding of its role. We must remember Henriette Avram's observation, "Networking is only a vehicle and/or a means to an end, not an end in itself."

The need for a national plan for networking has been a topic of debate. Some blame a portion of our present problems on the absence of a specific plan superimposed by an appropriate "agency." They say the original reasons for organizing ourselves as we have are no longer valid. Our purposes have changed; our mission is different. We have created a national system by default, but we are still without a national plan. Have we made a mistake in permitting networking to emerge from the grassroots? Should we conclude networking can be no more than the coordination of local efforts?

It was in that context that on December 9-11, 1985, over forty people assembled for the Library of Congress Network Advisory Committee Meeting. With continued support from the Council on Library Resources, NAC pursued the theme of its May 1985 session in which it sought to identify key issues in networking. Recognizing that library objectives are quite diverse and those of networks difficult to define, NAC set out "Toward a Common Vision in Library Networking." Specifically, it attempted to determine the effectivness of networking, to identify a common vision or goal, and then to develop a strategy to accomplish that goal.

As it listened to the players and stakeholders and examined the barriers and trends, it tried to determine what common elements our diverse networks share. It pledged itself anew to the official NCLIS goal but customized it by seeking "a system which provides to users on a timely basis the information they need at a cost they can afford." Even with a consensus on the goal, it admitted there may be many parallel efforts in its pursuit.

Networking, a complex phenomenon, cannot be simplified without risking distortion. To no one's surprise, NAC concluded that technology has affected the roles and services of libraries more radically than many had perceived. Technology will provide an even wider range of possiblities to improve information access. The management, economics, and politics of information also received similar attention from the twelve presenters. As information and its uses increase, the library community must realize that its raison d'etre must be to improve the quality of life of the user through improved and equal access. It must guard against the threat that information will be available only to the elite—the literate and well-educated—and to those who can afford it.

Economic issues are critical and must be addressed with improved fiscal strategies. The economy to be achieved in participation is no longer a valid reason for network existence. Libraries no longer join networks simply because they believe in cooperation, for cooperation has its own price tag.

There must be a return in investment and a value added. The demand for the least cost is compelling the vendor to market directly to the end user. Networks are having to be more aggressive in marketing their services, and changes in pricing policies are inevitable.

The information consumer must be made more aware of network activities and their importance. Hopefully, a new image will emerge that will reflect the changing role of the network. The public should be educated as to the shared vision and made aware of its role as players or participants. In so doing, care must be taken to avoid creating expectation gaps.

Network organizations seem to shape themselves rather than being shaped by external forces. Decisions made by local libraries are greatly influencing the future of networks. There is more and more confusion about the role of networks as they overlay one another with their programs. State and intra-state networks are rapidly emerging. Regional programs should continue to address those topics best considered at that level, such as interlibrary loans, collections development, and preservation.

The lack of adherence to standards is not only precluding cooperative programming but also is the source of much confusion as the user moves from one library environment to another. International interests are growing and pointing more vividly to the need for compatibility. Many more linkages will be seen over the next few years--utility to utility, library to utility, library to other information providers, and scholars to information sources. However, the library community does not appear to be as interested in linkages and gateways as it is in local control and decentralization.

Encouraged by the many consultants, local options have become very important to libraries as they seek to be less dependent on others, particularly the national utilities. Networks are realizing the impact of this trend toward local systems. A local system with its increased autonomy appears to be the way to better control our destiny. But the library community has failed to recognize that more autonomy could mean less cooperation; decentralization may decrease access and bring about a decline in the cooperative spirit. Will networking become less important as these powerful local systems emerge? Could history not be repeating itself? Constraints in the economy could ultimately force us back to more cooperation and away from the self-sufficiency of local systems.

More cataloging will be done on local systems. As we try to push the networking resources closer to the end user, the scholar's workstation is perceived to be the center or hub of networking. Some plans link them directly to the information source. Online databases are replacing local reference desks. Some libraries call themselves Information Service Centers and have direct links to or control over computer centers. Improved communication is being achieved through electronic mail, and electronic publishing will soon be commonplace. Bibliographic control is giving way to information and text access as a major goal. Therefore, publishers should be given a greater role in networking. As the commercial sector becomes more active, it will work more closely with libraries through common patterns of organization, uniform standards, and shared communications, hopefully for the greater good.

Prior to and following the NAC meeting, participants and other selected individuals from the information community were asked to respond to a questionnaire containing three questions:

What is your vision of networking?
What are the strategies to achieve this vision?
What are the barriers to achieving this vision?

The responses were enlightening. The above summary has incorporated most of the salient points regarding the vision itself, but among the strategies suggested were the following:

- Gain bibliographic control of that not already covered
- Involve publishers and information providers; they play an ever greater role
- Continue parallel paths, but increase coordination among them
- Encourage forums for discussion; implement a series of major discussions as a follow-up to the NAC program
- Re-examine and clarify the role of the players
- Seek an increased willingness to cooperate; analyze the motivation; note the benefits and advantages; determine real costs
- Encourage more involvement of state and national libraries
- Determine the relationship of the local system to the national system
- Control expectation levels
- Involve private, not-for-profit, government, and public sectors.

Among the barriers listed by the respondents were the following:

- Lack of perceived value in cooperation
- Redundancy of efforts; consumption of scarce resources
- Failure of networking to reach the vast majority of libraries
- Failure to establish a mechanism for collecting holdings information from locally processed cataloging
- Lack of standards and protocols, as well as failure to adhere to those that currently exist; incompatability; reversion to local standards
- Failure to integrate the end user into network activities
- Lack of fiscal strategies; critical network economic issues need to be addressed
- Controversy over contracts, copyright, and royalties
- Lack of public awareness of network activities
- Lack of understanding of the value society places on information
- Uneven access to information
- Lack of understanding of the politics of sharing; vested and proprietary rights; turfs; territorial rights
- Insensitivity to interdependence
- Technological threat to cooperation

The meeting was a grand occasion and, hopefully, will be the forerunner of several more. However, this afterthought is relevant: If the network community does not find a way to effectively address these issues and to articulate and pursue its common vision, it could be taken over by the march of events and relegated to irrelevance.

—Frank P. Grisham

A COMMON VISION: NETWORKING FOR NETWORKERS AND LIBRARIANS

JoAn S. Segal
Association of College & Research Libraries

Introduction

An excellent symposium was held in 1979 under the title Networks for Networkers. The papers were first-rate and encompassed a range of visions about networking which have guided networkers over the past 15 crucial years of growth. The meeting being held today by the Network Advisory Committee (NAC), is designed to look at the future, with new "givens": a definition of "networking," rather than of networks, and a set of six "basic premises" upon which networking is to be based. Networking is, significantly, described as a vehicle for meeting the needs of library users.

I am personally very grateful to you for inviting me to address you and I hope that my sharing of my own metamorphosed perspective will be helpful in setting the stage for your delineation of a common vision for networking which the NAC can and will promulgate with all the energies at its disposal. The perspective I bring is such that it might bear the title, "Networks for Networkers and Librarians" (in the service of library users.)

Confessions of an Ex-Networker

My personal experience with networking was gained through my six-year involvement with the Bibliographical Center for Research (BCR), a regional net work which provides access to OCLC, online databases, and microcomputers, including discounts, training, technical assistance and consulting to libraries in the Mountain Plains Region of the U.S. At BCR I learned a lot about the economics, politics, and technology of networking and networks. I found myself developing the usual impatience with librarians' lack of understanding of these three important factors. With other staff members, I worked to educate BCR's member librarians about how the technology works, how networks are paid, and what political factors need to be dealt with in keeping a network viable. I felt that I had been able to integrate networking concepts into my general knowledge of librarianship; why were my colleagues in the libraries so slow at doing so?

In 1984, for a variety of reasons, I left the networking world to become an association executive. As Executive Director of the Association of College and Research Libraries (ACRL), a division of the American Library Association (ALA). I now have a new set of "blinders"; I am impatient with how little the members know about ACRL and ALA: their structures, finances, politics, and mode of operation. From my new position, I have a changed perspective on networking. Let me identify what I think are the particular concerns of librarians - at least of academic librarians, with whom I spend a great deal of my time.

Issues & Concerns of Academic Librarians

Over the past 15 months I have immersed myself in the academic library world. I have attended meetings, conferences, pre-conferences, symposia, planning sessions, and even a retreat. From these sessions, together with reading the library literature and "press", and from private conversations with academic librarians, I have prepared the following list of issues and concerns of academic librarians. I propose to describe these items and to relate them to networking in two ways: the contribution of networking to exacerbating these concerns, and the potential of networking for alleviating them.

- Technology. Academic librarians are concerned about the impact technology will have on their role in the academic community. They are thinking about the likely increase in the number of institutions establishing a position such as "Vice President for Information Services," having jurisdiction over the Computer Center and the Library. They are interested in the likelihood of scholars' work stations, and are training end-users. They are worried about the competencies needed to use technology effectively. They wish to maintain or re-establish a balance between human and computer concerns.

- Management. Academic librarians face serious problems in administration. It is an era of strategic planning, with which many need help, and where their parent institutions are often slow themselves. They would like to have a set of standards to help guide their planning efforts and to help their performance. They desire statistics for comparative purposes. Personnel management as a subset of management is the single most important aspect with which managers must deal. They are faced with unions, the concept of quality of work life, participative and consultative management techniques, and professional development for staff members and themselves. And, they need help with the management of technology.

- Economics. The financial problems of academic libraries include relatively fixed budgets (Talbot[1] points to a fairly fixed formula of 4% of institutional budgets going to academic libraries over the past 15 years but ACRL's College Library Standards and University Library Standards specify 6%) within a framework of increased materials, labor, and technology costs. The hoped-for savings resulting from the implementation of technology have not been realized. What is more, librarians are under considerable pressure to buy on the basis of price alone. Faced with a choice between networking and an inhouse system, many a librarian is unable to justify the additional expense of the shared group activity. There is frequently a failure to perceive the difference between a system that can generate catalog cards and one which provides a real-time link with the collections of libraries throughout the world. Library managers discuss the major reallocation of resources; the substitution of online for hard-copy reference tools, the replacing of professionals with paraprofessionals in technical services, the emphasis on information tools, bibliographic instruction, and consultative work with faculty and research staff.

° Services. The provision of high-quality service requires ever-increasing hours of opening, sophisticated bibliographic instruction, Selective Dissemination of Information, (SDI) for faculty and research staff; online searching; training of end-users; and faster availability of materials ordered (for purchase or interlibrary loan). Modern collection development policy reflects the program activity of the institution, rather than "collecting by the numbers," together with dreams of cooperative collection development.

° Politics. Academic librarians are discovering that they must be involved in an increasing number of political arenas. The significance of institutional politics has become apparent to them; they actively seek allies on campus: among administrators, faculty members, even student groups. More and more, they are called on to meet state government leaders, and even to give testimony before congressional committees. They are involved in network fora, consortia, ALA/ACRL, the Association of Research Libraries (ARL), the Center for Research Libraries (CRL), the Research Libraries Group (RLG), OCLC, and activities related to the Bibliographic Services Development Program (BSDP), of the Council on Library Resources (CLR). Their libraries cannot prosper without these political alliances, but those libraries need administration, too. Who is minding the store?

Networking: The Cure or the Problem?

How do librarians faced with these five areas of concern view networking? It is at once a factor exacerbating the problems and a mechanism for curing some of them.

° Technology. Understanding networking - particularly its technological aspects - is a major challenge for academic librarians. Where can they turn for intelligent advice about networking and other aspects of technology? Their networking activities have largely clustered around cataloging and interlibrary loan, but the technological demands on them are much broader. The current demand to increase automation services which are directly related to users lies outside the scope of their "old" definition of networking (and - depending on interpretation - perhaps outside the scope of the definition and basic premises set for this meeting.) Where can they get the help they need? Is there any role in networking for meeting these needs? If networks can help, how do they get this message broadcast?

° Management. Managing the networking functions and technological aspects of libraries is one of the most demanding tasks of academic librarians. Staff training in specific systems is only part of the need faced by library managers; they and their staff members need constant updates on such topics as telecommunications, the basics of microcomputer opera tions, elements of e-mail, the latest changes in DIALOG and BRS commands and features, and methods for teaching end-users to search. They need help with space organization, placement of equipment, selection of terminals and printers, and ergonomics. They want to know what is a reasonable level of demand that can be made on staff using video terminals. Increasingly, union activity has focused on technology and its impact on library workers. Managers need information to take to the negotiating table. Networking has placed most of these burdens on the administrator-librarian. Who will help with the problems? I know network staff members are aware of some of these concerns, but they often have to deal with them as secondary, rather than primary in importance. Programs to help librarians manage networking are sorely needed. We have given some thought to the competencies needed by those who will work in networks. Librarians also need certain skills to be able to work effectively as network members.

° Economics. The effect of networking in this area is very significant. Technological advances have increased, rather than decreased, library costs in actual dollars. While Fred Kilgour, founding father of OCLC, may have carefully promised a reduction in the rate of rise of per-unit costs, many librarians feel they were misled by the promise of reduced costs. Their visions of networking allowing for reductions in staff, with salary dollars diverted to collection development, conservation, or building needs, have vanished unfulfilled. They have learned a new "line" - that automation doesn't save dollars; that staff can be re-assigned to user service work - but some are still trying to regain credibility with administrators, and all are testing uncharted territory in reallocating resources.

Kevin Hegarty[2] recently asserted that automation can save libraries money. Although he relied heavily on the experience of one library, his article may be a bellwether of reassessment of the costs of automation, but librarians (academic ones, at any rate) are hesitant to justify automation on economics grounds at the present time.

Another major economic problem for librarians is coming to grips with availability of services from both the private and the public sector. Coming from the world of allocation budgets, few librarians have a good grasp of the economics of running a business. They need education in financial and cost accounting and in the economics of information.

I think it significant that of the six basic premises underlying networking of the NAC, only number 4 specifically implies economic benefit (duplication of effort.) Numbers 5 and 6 imply efficiency and therefore possibly economy (rapid and efficient delivery of information; efficient and effective use of technology.) Are there additional ways to help libraries reduce costs of technology through networking?

° Service. The impact of technology, much of it networking-related, on service to users, has been phenomenal, yet many users are oblivious to this fact. The shortened span of time from order to on-shelf availability of most book and serial materials, the improved finding rate and turnaround time on ILL, and the availability of limitless numbers of bibliographic citations from online searching have touched large numbers of users, but it is often only the public online catalog which brings library automation to the consciousness of the user. Librarians are eager to bring automation in out of the workroom, but most networking activities support work in non-public areas. What can the networking role be in more direct provision of services to users? What assistance can librarians expect in deriving measures of output such as "documents delivered", for statistical reporting? How can we accommodate users with home computers, scholars with advanced work stations, and students and faculty on the "wired" campus?

° Politics. Networking has seemed to play a disproportionate role in library politics over the past few years. "That's where the action is," was the response of a network director at a recent meeting I attended. Although I first laughed and agreed, I later rethought the position. It's true, there seems to have been a kind of glamour associated with networking. Perhaps that's because of its novelty, the risky nature of the activity, the higher pay at the management levels, the large amounts of money involved, and the open controversies among networkers. But much of the action is in libraries, and in their political relations with their universities, state and federal government, consortia and associations. The primacy of the role of the library within its community, providing service to users, must be recognized. In my recent survey of the literature for the Annual Review of Information Science and Technology (ARIST),[3] I noted some classic studies of human communication configurations, as reported by Goldhaber.[4] In the experimental situations, subjects are assigned to a task involving passing messages over one or another network structure. A ring network, where messages are passed from one person to another around a circle with no central node is the slowest and least accurate, but most personally satisfying communication mode, whereas a star network, where one key person receives all messages and redirects them to the appropriate receiver, is fastest and most accurate; but least satisfying to the subjects. A hierarchical structure gives intermediate results.

The library literature clearly indicates a resistance to networks perceived as "centralized" (whether they actually are or are not so configured. In fact, almost all library networks have significantly distributed at least some of their activity.) Some of this pull toward "decentralization" may be based on a reaction against what many librarians perceive is an exaggerated sense of the importance of networking and networks. Adjustments may need to be made to obtain widespread reaffirmation of basic premises 1 and 2, the necessity of resource sharing and the dependence on libraries' willingness to participate. Can the trend toward local "self-sufficiency" be overcome? How do we strengthen networking ties enough to keep them unbroken under the pressure of apparent "bargains"? Finally, what is the appropriate level of aggregation for the various activities to be carried out by networking? Some things are best done locally, others at the consortium, state, regional, and national level. Making these decisions is a highly political task, and it must be done soon.

Setting the Stage

It is very appropriate for the NAC to have asked me to "set the stage" today. One of my "careers" has been as an actress in Denver and Boulder, Colorado. In addition to acting, I wrote my dissertation in the Department of Communication at the University of Colorado on phases in the development of theater casts. In my work, I observed theater casts from casting through closing by participating in nine casts, observing three, and studying written reports of three more. I treated casts as a special case of group development, referring to earlier work by communication scholars, including Tuckman,[5] identifying the phases through which groups move in their life span. I observed that theater casts move through the following phases:

Forming: Casting, getting to know one another.

Norming: Learning what the rules are, how to work for the director, when the deadlines are.

Storming: Rebelling against the director, arguing about interpretation, costuming ideas, personal conflicts.

Transforming: Unique to theater groups; the stage when actors take on the characters played, make them and the situation of the play real. A key factor here is building the scenery to set the stage.

Performing: The play opens and the actors perform for audiences.

De-forming: The show closes. The set is struck. There is a tearful party and the group exists no more.

With the exception of the transforming phase, these are phases through which every group typically passes. Perhaps networking activity can be seen in light of these stages of development. Networks have:

Formed: The history has been chronicled repeatedly.

Normed: Established standards, particularly MARC. The peer group of networkers know the rules; they each understand what all do. Cooperation is established as a norm, as is non-profit status.

Stormed: The players fought privately and publicly, with their conflicts appearing regularly in the library press, whether real or not.

Performed: Well, and for years.

If this is the time for setting the stage, does that imply that there will be a transformation? If so, what will the new form be? If not, is there a de-forming phase ahead, as predicted by Susan Martin[6] and Dick DeGennaro?[7]

Barbara Markuson's[8] reference to Drucker's[9] concept of the "futurity of present decisions" is highly pertinent. Unique in the work of NAC today is the awareness of the future implications of decisions taken today. That is most hopeful.

Suggestion for a Common Vision

I know you have all shared your visions and I wonder as I write whether and how they will be different from mine. In the ARIST chapter, I predicted that "the most likely pattern of network development for the near future seems to be a mixture of "centralized," "distributed," and "linked" modes. Libraries will continue to use national (or regional) databases for cataloging data and interlibrary loan. Local automation projects for online catalogs, circulation, acquisitions, and serials control will be decentralized, and linking, using the model of the International Standards Organization (OSI), will probably be successfuly achieved and applied in the near future."

However, as I sat on an airplane recently, I read in the inflight magazine the goal of the editor and publisher of a small but growing newspaper in the microcomputer and office automation field. Asked what image she had for her newsletter in 10 years, she responded: "The Wall Street Journal." Her rationale was that in that short time these technologies would not be the focus of attention, but would be part of every business and an integral and integrated element of the business world, so that her newspaper would encompass the rest of business news in its span.

I realized that, more than the question of "decentralization" of network structures, my vision of networking in the future is that it will be an integral part of librarianship, not singled out as much as it has been over the past fifteen years. I have described some of the problems facing librarians, particularly in academe, and have related those problems to networking. In doing so, I set the stage for my own vision of how networking should be transformed. Networking should and will be an aid in delivering services, a way of helping librarians gain competencies and skills related to technology, a help in managing libraries in general and in particular, technology, an economic boon to library budgets, and a strong political support in all the arenas where librarians need it.

Conclusion

To create a truly common vision of networking, we need to collect ideas not only from networkers, but from librarians of all types and sizes of libraries, vendors of a variety of products and services, and from present and potential users of libraries.

The ultimate common vision is the integration of networking into the mainstream of librarianship. We must substitute for the vision of libraries fitting into the automation picture a vision of networking of many types fitting into the library scene.

NOTES

1. Talbot, Richard J. Financing the Academic Library. in Galvin, Thomas J. and Lynch, Beverly P., eds., Priorities for Academic Libraries. San Francisco: Jossey-Bass, 1982. (New Directions for Higher Education, no. 39)
2. Hegarty, Kevin. Myths of Library Automation. Library Journal, 110(16):43-49, October 1, 1985.
3. Segal, JoAn S. A Theory of Group Development in Theater Casts: a Special Case of Small Group Theory. Boulder, CO: University of Colorado, 1978 (Ph.D. Dissertation).
4. Goldhaber, Gerald M. Organizational Communication. Dubuque, IA: William C. Brown, 1974.
5. Tuckman, B.W. Developmental Sequence in Small Groups. Psychological Bulletin, 63:384-399, 1965.
6. Martin, Susan. Networks: Changing Roles. Paper presented to the Network Advisory Committee, May, 1985.
7. DeGennaro, Richard. Library Automation and Networking: Perspective on Three Decades. Library Journal, 108(7):629-635, April 1, 1983.
8. Markuson, Barbara Evans. Issues in National Library Network Development: an Overview. Paper presented to the Network Advisory Committee, May, 1985.
9. Drucker, Peter F. Technology, Management, and Society. NY: Harper & Row, 1973.

REFERENCES

1. DeGennaro, Richard. Library Automation and Networking: Perspective on Three Decades. Library Journal, 108(7):629-635, April 1, 1983.
2. Drucker, Peter F. Technology, Management, and Society. NY: Harper & Row, 1973.
3. Goldhaber, Gerald M. Organizational Communication. Dubuque, IA: William C. Brown, 1974.

4. Hegarty, Kevin. Myths of Library Automation. Library Journal, 110(16):43-49, October 1, 1985.

5. Markuson, Barbara Evans. Issues in National Library Network Development: an Overview. Paper presented to the Network Advisory Committee, May, 1985.

6. Markuson, Barbara Evans & Woolls, Blanche, eds. Networks for Networkers: Critical Issues in Cooperative Library Development; Proceedings of a Conference, Indianapolis, IN: May 30-June 1, 1979. NY: Neal-Schuman, 1980.

7. Martin, Susan. Networks: Changing Roles. Paper presented to the Network Advisory Committee, May, 1985.

8. Moran, Barbara B. Academic Libraries: The Changing Knowledge Centers of Colleges and Universities. Washington: Association for the Study of Higher Education, 1984. (A SHE-ERIC Higher Education Research Report No. 8.)

9. Segal, JoAn S. Competencies for Library Networking and Cooperation, in Smith, Linda C., ed. Professional Competencies - Technology and the Librarian. Urbana, IL: University of Illinois Graduate School of Library and Information Science, 1983. Clinic on Library Applications of Data Processing: 1983.

10. Segal, JoAn S. Networking and Decentralization. Annual Review of Information Science and Technology, 20:203-231. White Plains, NY: Knowledge Industry Publications, Inc., for the American Society for Information Science, 1985.

11. Segal, JoAn S. A Theory of Group Development in Theater Casts: a Special Case of Small Group Theory. Boulder, CO: University of Colorado, 1978 (Ph.D. Dissertation).

12. Tuckman, B.W. Developmental Sequence in Small Groups. Psychological Bulletin, 63:384-399, 1965.

The Nationwide Network and OCLC: A Vision and a Role

Rowland C. W. Brown, President
OCLC Online Computer Library Center, Inc.

In considering OCLC's vision of a nationwide network and its role in that network, we are fortunate to have considerable help from an excellent paper(1) and talk by JoAn Segal, both presented at the 1985 December meeting of the Network Advisory Committee to the Librarian of Congress. We also have the benefit of a fine and thoughtful paper by one of my network mentors, Barbara Markuson,(2) a comprehensive analysis of networking and decentralization by JoAn Segal(3) and Susan Martin's provocative challenge to us on networking's changing roles and its possible disappearance.(4)

There are also a number of thoughtful articles that approach the subject of networking from various points of view. Of particular note are Richard McCoy's article on electronic networking for the scholar,(5) Patricia Battin's articulate analysis and call for leadership in examining and questioning the role of librarianship in the information age,(6) Marilyn Gell Mason's discussion of the public library of the future(7) and Pat Molholt's mind-expanding journey into how the user will fare in the electronic information age.(8) All of these talks, papers and articles, as well as others that space precludes my mentioning, provide rich intellectual resources that aid us in our thinking.

One might well ask if what is expressed in this paper is OCLC's vision or the author's. It is an appropriate question. In an organization as large, complex and diverse as OCLC, I find myself constantly trying to make and keep this distinction, a task made more difficult by the fact that OCLC is a membership organization, and there are probably at least as many views of its "proper" role as there are members. Perhaps it will be easiest for you to make the distinction in this way: when you agree with what I say, it is OCLC policy; when you disagree, you may wish to call it my personal prejudice.

Before turning to our vision of nationwide networking, I feel compelled to review some of the issues that have been repeatedly cited as influencing all of us in our vision of networking, whether we like it or not. These issues include:

- o Technology as a driving, almost overwhelming, force
- o Library and information economics and the frustration frequently felt by those who do not perceive the hoped-for economic benefits of automation
- o The challenge of providing ever-proliferating services to an ever more computer-literate end user of libraries in the face of growing commercial offerings outside the library environment
- o The changing role of the library itself---in the university, college, municipality, or school system and in the professions

- The increasing role of commercial enterprises---frequently international in scope---not only as general information providers but also as providers of bibliographic and networking services to libraries specifically

- The increasing number of technology-driven local options and local cost-benefit considerations that ignore networking in a national, let alone international, resource-sharing environment

This last development is perhaps the overriding issue because it poses powerful and insidious challenges to the cooperative development of regional resources as well as national resources like OCLC and the Research Libraries Information Network (RLIN). As Ron Miller pointed out in a recent paper for NAC, "Economic forces and the prospect of greater local control have re-emerged as overt causes for key decisions. Some recent developments in technology help to support [libraries'] behavior."(9) These forces and the accompanying technologies are seductive in their promise of immediate reward, but I would caution that the reward may well be an illusion, and to the greater good of national networking and cooperation they are destructive.

This decentralization, or balkanization, or "self-sufficiency syndrome," so forthrightly acknowledged by Susan Martin,(10) is perhaps our greatest challenge. We ignore it only at our peril, because individual libraries will ultimately decide whether to abandon the concept of a national "network of networks." Hundreds---possibly even thousands---of libraries, including large research libraries and, more and more often, public and smaller academic libraries will determine the future of a national network. State officials are surveying their options for providing for their constituencies, which the bibliographic networks generally do not serve on a large scale. A few state libraries are already looking at ways which, while they build on OCLC-derived records as well as LC records, make no pretense of supporting or contributing to a national system.

Barbara Markuson has reminded us that the realization of so-called "national information resources" is in major part a function of a combination of local actions:

> The majority of library collections, services and access are provided by local agencies, using local funds, and . . . any extended access has come about through professional cooperation and operational necessity. The reality is that our tremendous system of nation-wide access to library holdings would stop dead in its tracks without constant local concern and financial support.(11)

Libraries face a critical dilemma that presents the greatest danger to national networking: their known obligation to deliver services locally often conflicts directly with their perceived obligation to share resources on a national scale. Part of the difficulty is cost; part is the fact that external forces control the national environment. They find that they are unable to justify a larger, national role for their libraries when they compare its cost with their investment and participation in local in-house systems, clustered systems or even state systems, over which they believe they can exercise a greater degree of control. As JoAn Segal has observed, "There is frequently a failure to perceive the difference between a system that can generate catalog cards for one's collection and one which provides real-time links with the collections of libraries throughout the world."(12)

In emphasizing the size of our national database, we at OCLC sometimes tend to minimize, or even ignore, the importance and the usefulness of the more than 210 million holdings symbols that are attached to the records in the database. These holdings make possible an incredibly effective interlibrary loan system, and the way this system is used suggests that libraries of all sizes and types depend on each other, to a far greater extent than they realize, to supply at least a part of their patrons' needs. Let me give you just a few facts gleaned from an analysis of our interlibrary loan activity. Looking at 1984/85 OCLC Interlibrary Loan Subsystem statistics (and recognizing that the holdings information in the database generates very significant interlending activity without use of the ILL Subsystem and that such activity is not included in these figures), we find that

- 2.2 million ILL requests were made, and 85 percent of those requests were filled.
- only 56 percent of the requests were filled within the state of origin.
- the ILL Subsystem involved about 2,600 lending institutions and a similar number of borrowing institutions in all 50 states, the District of Columbia and the United Kingdom. (SOLINET, AMIGOS, PACNET and, interestingly, FEDLINK were the most active networks.)
- academic institutions---other than research---were the largest lenders, with research libraries a close second.
- public libraries were the largest group of net borrowers.

It is worth noting that, in addition to these ILL data, there are 67 OCLC serials union lists online, and these comprise libraries of every conceivable type and size. There is a great deal of borrowing among union list participants that does not show up in our records. There is also much multistate activity on RLIN and the Western Library Network (WLN). This high level of interdependence should be kept in mind when we hear suggestions that networks of library types or state networks can replace a national network of networks.

National and international networking organizations play an important role in resource sharing, national and international retrospective conversion projects, preservation programs and cooperative collection development. Moreover, a number of programs of vital national and international significance (e.g., CONSER, the U.S Newspaper Program, the Major Microforms Project, the National Federation of Abstracting and Indexing Program and broadly based preservation efforts) depend heavily for their very existence on a national database and a national network of cooperation. I underscore Barbara Markuson's admonition that "we need to make it known to federal and state governments, and to the general public that the extraordinary access to interlibrary information enjoyed in our country rests on local funding, local initiative and professional cooperation on a virtually unique scale."(13) I would add that we also need to make them aware of the synergism that results from the support of collaborative efforts by the Library of Congress, the national libraries, the National Endowments, the National Commission on Libraries and Information Science and the U.S. Department of Education in this total effort.

What is our vision of future networking in the face of these strong decentralizing forces? As I have said in the past, those of us who live by technology can perish by technology. Similarly, those of us who have waxed on mutual support can wane when that support dissipates, for whatever reason. None of us should expect to continue to exist just because of our past accomplishments or our own perception of our intrinsic value to the changing library scene. Decentralization will continue. Certainly, we can work towards shaping it in ways that preserve national and international networking, but we cannot, and should not, stop it.

My belief is that we will continue to have networks of networks in the United States that create a nationwide network, with no monolithic structure. Libraries---in growing numbers---will, through new options, programs, pricing and collaborative leadership, continue to use the large national bibliographic databases, or subsets derived therefrom, for cataloging and interlibrary loan. Just as Patricia Battin has called upon librarians to accept the leadership thrust upon them to reinvent the library in the electronic age,(14) I believe that OCLC, its supporting networks, its members, its constituents and a widening list of parties in interest must accept a vision of a larger and broader role in creating and supporting a sound educational infrastructure, building upon the cooperative patterns and enlightened self-interest that have served us so well in the past.

I believe that there will be greater cooperation and resource sharing among the bibliographic networks---this is already under way---and that there will be continued efforts to maintain, strengthen and expand national and international standards. (We must always keep in mind, however, the unique and different requirements of catalogers and library patrons.) I believe this will happen because those of us who are committed to national and international networking will

- communicate the issues better to a wider audience.
- concentrate on increased actual economic value and find ways to become more cost-effective.
- continue to stay abreast of emerging technologies and accommodate these changes quickly in a blend of centralized and distributed architecture and services.
- recognize that the public and private sectors need to work together and that each sector has legitimate roles in both complementary and competitive modes.
- move, not necessarily in unison, beyond bibliographic control as our raison d'^etre to focus on access to and delivery of content and the merging of information technologies.
- make users aware that our national networking has, indeed, become a part of a global networking pattern that does not merely serve librarians but enriches the intellectual resources of the nation and the world.

Changes in our networking concepts must accommodate technological change and the hopes, wishes, desires and needs of new actors appearing on the scene, but, more important, these concepts must reflect changes that are taking place in the library itself and in the way people use libraries, and they must respond to the shifting patterns of the educational process as it makes greater use of an increasing variety of media. Like libraries, bibliographic networks, including OCLC, must be seen as means to serving users' needs, not as ends in themselves.

To bring about these changes in networking, we will have to exert effort at every level and tier in the library and education community. Specifically we must

- broaden our vision; encourage universities and colleges, for example, to integrate their information and computer resources with the library as the central information provider, rather than to pursue time-shared support of uncoordinated or redundant activities.
- support consortium activities for resource sharing, rather than focus solely on the needs of individual institutions.

- encourage state library and other resource-sharing systems to recognize that major academic institutions and other repositories of information are essential supplements to state resources and that a state has much to gain from collaboration and record sharing with multistate, regional and national networks, of which these major academic institutions are a part.

- continue to encourage regional-network online systems to upload holdings and records to OCLC, as they benefit from a national cataloging database.

- encourage national consortia, national libraries and other major national institutions to participate in international resource sharing and ensure that standards and protocols continue to be developed to facilitate this.

Now, what will OCLC's role be in this vision of the future? The directions have, in large measure, been set. The OCLC charter has, of course, been our primary guiding force, but let me review some key OCLC decisions that over the years have helped to determine our course:

- Our early decision to rely on cost-effective transaction activity for revenue generation and membership support, rather than on dues, assessments or grants

- Our decision to extend membership to all kinds of libraries, not just the large academic institutions, and to include in our offerings all available materials formats

- Our decision to extend the OCLC network beyond Ohio to the 50 states

- Our decision, based on the A. D. Little study ("A New Governance Structure for OCLC: Principles and Recommendations") to establish a corporate structure with decision making centered in a board of trustees composed not only of librarians but of persons with expertise in finance, telecommunications, marketing, computer science, law, etc.

- Our decision to establish a Users Council as part of our governance to represent the membership, rather than to operate as a federation of networks

- Our move to strengthen and broaden our varied management resources and to build a strong financial structure to accommodate growth contingencies and system replacement

- Our borrowing of significant long-term growth capital from the private financial markets, assuming on behalf of our membership the obligations and accountability for sound financial management that such borrowing entails

- Our commitment of significant financial, technical and human resources to a distributed architecture, our role as a leading proponent of micro-based workstations and enhancements, and our offering of local integrated systems (this will soon be extended with laser-disk-based distributed services here and abroad)

- Our continued commitment to, leadership for, and investment in national programs such as CONSER, the U.S. Newspaper Program and others

- Our commitment to the Linked Systems Project (LSP) as a means of improving record transfer, timely access and resource sharing

- The revision of our pricing structure to provide incentives for original cataloging and lending, as well as to establish an equitable basis for charging for searches as we anticipate greater searching by users not involved in cataloging and ILL activities

- Our significant, increased commitment to applied and general research in both library and information science

- The change of our membership structure to encourage members of the Research Libraries Group, Inc., (RLG) to load their records by tape into the OCLC database, in order to facilitate greater resource sharing and to provide searching of the OCLC database to those who are cataloging on RLIN

- Our development of group-access capabilities and contractual and system innovations to accommodate state resource-sharing plans, as in the case of California, and to provide economical tapeloading arrangements for certain network-developed holdings and records

- The extension of our network, through collaborative agreements, to an international network of networks

- Our commitment of very significant resources to the complete redesign and reimplementation of the OCLC Online System, which is already the largest and most efficient bibliographic system in the world, to enable us not only to do better what we do today, but also to empower the user at the workstation and to provide multiple databases at the workstation through the use of laser-disk technology and retrieval software

As these decisions and actions strongly suggest, we will continue to build and maintain an international bibliographic database, not merely as a "business asset" but as a fiduciary trust on behalf of the library and education community throughout the nation and the world. While there will be increasing use of local, state, regional and commercial databases based primarily on LC-MARC tapes or disks or on state and regional collections, we expect, for the foreseeable future, to be the bibliographic database of ultimate resort for many, if not most, of our current members and for a growing number of non-U.S. institutions.

Most libraries, both here and abroad, be they academic, public or special, will continue to have a high rate of success in finding an item in the OCLC database from various national MARC entries or from items already cataloged by OCLC's nearly 5,000 member libraries. Moreover, as is generally recognized, we are and remain the principal source of holdings information on an interstate, national and international basis. We will continue to work with states, other networks and local clusters to meet our different but mutual goals of access to bibliographic information and resource sharing, building on the experience we have gained with other states. To cite but one example, we are currently working with SOLINET to explore cost-effective ways of using our mutual resources to serve an ever-widening group of libraries.

At the same time, we are negotiating with institutions in various parts of the world to establish mutual access to and exchange of records. We are also seeking to resolve problems with MARC-format conversions, conversions of varying national cataloging rules and differing communications protocols. Major new national and international retrospective conversion efforts are under way or are being planned with full OCLC support and investment.

The Linked Systems Project, to which OCLC is enthusiastically committed, will facilitate machine-to-machine interfaces and provide a means for the local automated library system of any cooperating vendor to be integrated with OCLC, RLG and WLN. By linking major bibliographic systems, LSP will aid in the implementation of national programs, including various cooperative programs among members of the Association of Research Libraries. It is also intended, at some point, to create direct terminal-to-terminal connections between selected bibliographic systems. However, for most users, but particularly for ILL users, we see a need to provide direct access to the large central OCLC database, which can be subdivided and distributed in a variety of localized settings while still supporting national networking.

Through tape and laser disk, as well as eye-readable formats, we expect to extend our already considerable distribution services to a variety of new users here and abroad. We have already become the primary distribution source of LC-MARC records for most of the larger libraries in the U.S. and for an increasing number of libraries abroad, and we are, of course, the original, and for most the only, source of OCLC member-contributed records. We currently have some 705 OCLC-MARC subscription users, and some networks, such as SOLINET and AMIGOS, also supply other users with LC-MARC and OCLC-MARC records.

The database, or more accurately the databases, in our new system will be capable of containing considerably more specialized information for the purposes of preservation and collection development. Subject searching on the entire database, available now in the first phase on BRS on about a million records, will make the system far more attractive to library users.

All of this brings me to what I see as the major change in OCLC's future role in networking. As others have noted, bibliographic control on a national scale was one of the earliest goals of OCLC and its membership. Academic administrators, trustees of public libraries, and particularly library users, however, are interested in network goals that focus on access, economics and other issues, in addition to bibliographic control, as they face difficult and often bewildering choices and decisions in library and information automation.

In recognition of this broadening of interest, OCLC will move beyond---notice I did not say "away from"---bibliographic control to access, that is, physical access to substantive information. In a continuum, we will provide more effective resources for the user including (1) subject search, (2) an intelligent gateway (UNISON), (3) reference services, both online and distributed, (4) Group IV facsimile transmission, (5) electronic journal development, through Graph-Text, and (6) electronic browsing of monographs, in concert with local library systems and through our project EIDOS (Electronic Information Delivery Online System). Most of these services will involve some form of optical-disk memory, more powerful workstations and distributed software.

In response to suggestions from many of our members, we will expand our efforts to integrate bibliographic information with other information such as abstracting and indexing services and other searching aids. We will also continue to make online public access catalogs more useful by providing access to resources outside the local library and the capability to search the OCLC databases as well.

While these new efforts and directions will have a profound impact on OCLC's structure, on networking and potentially even on our governance, they will be consistent with our long established mission. Not only will they require collaboration and competition with the private sector, but they will generate new forms of cooperative activities among our member institutions and among scholars. Unfortunately, time does not permit a full exploration of the many new forms of interaction that will enhance national networking. I believe, however, that these efforts will be more productive because of the national networking efforts and the collaborative initiatives that have already been so painstakingly established and nourished for so many years by so many agencies, institutions and individuals.

Susan Martin observed that numbers breed distance and create a lack of cooperation.(15) In recognition of this, we have been bending more of our effort towards communication with our member libraries and the people who use, or would use, our systems. We now operate with a very large number and variety of consulting, advisory and staff procedures in dealing with the problems of our present bibliographic control environment. Yet, at the same time, we are energetically seeking to increase the number of "parties in interest" in OCLC to include educators, scholars, academic administrators, foundation executives, computer systems managers, state librarians and state education officials, publishers, jobbers, information vendors and others who are concerned about the quality, scope and cost of "the ever-expanding body of worldwide scientific, literary, and educational knowledge and information,"(16) and equitable access to it.

As we metamorphose into an information network for users, not just through equipment, software, communications links and common databases, but by providing new collaborative input and output capabilities and forging new relationships with our users, we will be less a "bibliographic utility" and more an integral part of a larger national and international educational infrastructure. We will maintain our public purpose and our collaborative heritage, but we cannot and will not earn loyalty as an economic burden to our users. Competitiveness and cost-effectiveness have been watchwords for OCLC since its inception, and they will continue to be. But it is important---indeed, imperative---to understand that these are not our sole guides.

To many who view us from the outside, we may appear to be mired in issues of business, economics, law and politics. Certainly these are issues we must deal with, but at bottom, like the librarians with whom we work day in and day out, we are fired by a desire to serve those who need information and by the certainty that we can do so. That is our purpose and our mission. If it is true that from information comes knowledge, and from knowledge comes wisdom, then our purpose and our mission are worthy indeed.

Notes

1. JoAn S. Segal, "A Common Vision: Networking for Networkers and Librarians," paper presented to the Network Advisory Committee to the Librarian of Congress, Washington, D.C., December 1985.
2. Barbara Evans Markuson, "Issues in National Library Network Development: An Overview," paper presented to the Network Advisory Committee to the Librarian of Congress, Washington, D.C. May 1985.
3. JoAn S. Segal, "Networking and Decentralization," Annual Review of Information Science and Technology," ed. Martha E. Williams, vol. 20 (White Plains, N.Y., Knowledge Industries Publications, Inc., 1985).
4. Susan K. Martin, "Networks: Changing Roles," paper presented to the Network Advisory Committee to the Librarian of Congress, May 1985.
5. Richard W. McCoy, "The Electronic Scholar: Essential Tasks for the Scholarly Community," Library Journal 110 (1 October 1985):39--42.
6. Patricia Battin, "Crossing the Border: Librarianship in the Information Age," The Harvard Librarian 19 (September 1985):8--10.
7. Marilyn Gell Mason, "The Future of the Public Library," Library Journal 110 (1 September 1985):136--139.
8. Pat Molholt, "On Converging Paths: The Computing Center and the Library," The Journal of Academic Librarianship 11 (November 1985):284--288.
9. Ronald F. Miller, "The Impact of Technology on Library Networks and Related Organizations," paper presented to the Network Advisory Committee to the Librarian of Congress, May 1985.
10. Martin, "Networks."
11. Markuson, "Issues in National Library Network Development."
12. Segal, "A Common Vision."
13. Markuson, "Issues in National Library Network Development."
14. Battin, "Crossing the Border."
15. Martin, "Networks."
16. OCLC Online Computer Library Center, Inc., Amended Articles of Incorporation.

RLG IN A NATIONWIDE NETWORK

Richard F. McCoy, President
The Research Libraries Group, Inc.
(Summary)

The introductory paper, "Setting the Stage," identified a real-time link to the collections of libraries throughout the world, asked how we will accommodate microcomputer workstation users and expressed concern about the new role - in the academic setting - of the "Vice President for Information Services." These issues provide an opportunity to outline several important changes taking place in library networking.

The idea of real-time links to the world's library resources is changing from its status as an attractive dream and subject for futurist speculation to early planning stages. We are well along toward putting scholars in electronic touch with each other, for example, through Educom's BITNET and its links to Europe's EARN network. A logical next step will be to continue and rationalize the process of connecting the new "electronic communities" of scholars with the information resources which support their work.

The Linked Systems Project (LSP) - and support from other sectors for its technology - offers a technical means to establish the linkage. The expanding number of relationships and the communications lines being established by the national libraries and by RLG and OCLC, for example, will provide a starting place and the initial economic basis. LSP participants are already working on ways to broaden this activity.

Just as access will expand to an increasing range of library resources and internationally, it will also expand beyond what most have viewed as traditional library resources to the broader range of information from many suppliers. Here too, the LSP has a contribution to make. Work underway at present holds great promise to rationalize the tower of Babel which has been created by the plethora of formats, database structures and search strategies which have complicated the life of the on-line information user. A common search interface implemented by each supplier of on-line services within the framework of international standard protocols offers an exciting option.

The definition of "library" is changing in an important way to accommodate new access services and new forms of data. In addition to its traditional role, the library will be increasingly seen as a gateway to information networks and as a facilitator of access to an increasing volume of information which it does not own or have on its shelves.

The development of the Scholar's Workstation continues to occupy the attention of industry and the academic community alike; the interim experiences with widespread use of personal computers helps to chart the way in which the library will offer its services. The Scholar's Workstation and the local area network (LAN) on which it will reside are great forces for change. The on-line catalog, and other information resources, will, with increasing frequency, be accessed remotely, not requiring an in-person visit. The problem of accommodating these workstation patrons falls more heavily on local systems than on the library networks to which they will be connected. "The question" changed some time back from whether to install 20 of 50 access terminals in the library to how to satisfy thousands of patrons knocking on the library's electronic doors to get in! The greatest challenge will be in identifying new budget resources for new services; the technical capacity is available in systems now on the market.

We face, in fact, in library automation, a major "expectations gap." It is an economic gap between user's expectations and the ability of networking and technology to deliver what they want for an affordable price. Gaps can be closed by moving either end, and in this case the solution will probably be to move both ends toward the middle. Library automation needs to deliver significantly less costly means of access five years from now, and it will do that. At the same time, users need to recognize that the cost of extending access among networks, to new sources of material and to new geography are added costs which must be paid. It will be a good time to keep the focus on cost vs benefit.

The introduction of new services and new costs which accompany movement to an "information economy" presents a special challenge for libraries. They have long been viewed by their patrons as a "free" service offering access to all regardless of financial means. One change which information technology is bringing is a widening of the gap between the haves and the have-nots as they seek information access. As libraries seek new means to pay for their technology, surely, it is essential that they retain their key role in facilitating an "information democracy."

The forces of integration of technology and services at university campuses are leading to local standardization of networks and workstations. These forces are considerably greater than the influence the libraries may bring. The dedicated and special library terminal (whether OCLC, RLIN, NOTIS or GEAC) will be replaced in these settings by "standard" workstations running library-specific application software. The challenge for the networks and the library system vendors is to deliver their special capabilities in sufficiently transportable form to work in several locally "standard" environments.

A subtle but perhaps most influential change in which workstations are playing a key role is the movement of the PERCIEVED center of the library network. It may have been in Dublin, Ohio or

Stanford, California or Toronto, Ontario, but it won't be there long, 'cause its moving to the Local Integrated Library Systems now being widely installed. And the movement will not stop there. Inevitably, the user's workstation will come to be viewed (by the user) as the center of the information network. This is an exciting, and I believe, positive development. (One of its effects will be to deal very nicely with the concern expressed in the introductory paper that the networks have played a disproportionate role or have had an inflated sense of their importance...)

As recognition of the central role of access to information resources grows, I believe the library has the upper hand. It has crucial information resources, an understanding of cataloging and indexing, standards (which are incredible technical AND political accomplishments), critical service relationships with patrons, and - in the academic setting - a key position at the heart of the institution and a role in academic governance. The concern about the effect of the Vice President for Information Services and the related changes of which this position may be a symbol, is not a threat to the library (though the library will have to work hard to maintain its proper position). It may be a bigger concern for computing centers; they are disappearing; and libraries will take over part of their residual function when they're gone.

RLG's role in these changes will continue to reflect its nature as a program driven organization. Networking and technology will be developed and applied not as ends in themselves but in support of cooperative programs among research libraries. In the process, we hope that the technology we develop will continue to provide a visable alternative and challenge to what is being offered by other networks and vendors, and a stimulus towards technical excellence. We have recently installed Amdahl computers to provide the production environment for RLIN, and we can't help but look at the role which Amdahl has played for all users of IBM or compatible equipment: Its presence as a factor in the marketplace has led directly to increased performance, new capabilities and cost effectiveness in the main-frame computer market. This, for all users even though 90% and more were themselves never users of Amdahl equipment. If RLG and RLIN play such a role in library networking, we are delighted.

National Libraries' Vision of the Nationwide Network And Their Role in That Network

by

Henriette D. Avram, Assistant Librarian for Processing Services, Library of Congress
Lois Ann Colaianni, Deputy Associate Director, Library Operations, National Library of Medicine
Joseph H. Howard, Director, National Agricultural Library

The American Library Association noted in 1967 that the three national libraries, the Library of Congress (LC), the National Agricultural Library (NAL), and the National Library of Medicine (NLM), "form the keystone upon which any program of national library service must rest"[1] and Libraries at Large in 1969, discussing the fact that there were indeed three libraries expanded that statement to say, "It is thus a triple keystone, not a single one, and there is very little likelihood that anything will be done to alter that basic fact."[2]

Given this tripartite arrangement, Joe Howard, Lois Ann Colaianni and I met to discuss our part in today's presentation; that is, to describe our vision of the evolving nationwide network and the role we believe our institutions, as national libraries, play in this network.

It became obvious very quickly that, prior to arriving at any consensus, we had first to agree on our differences and similarities, in order for us to understand if we could in fact present a united front.

These differences are briefly summarized as follows:

1. The three libraries are U.S. government entities. NAL and NLM are in the Executive Branch and are subunits of the Cabinet-level agencies. LC is part of the Legislative Branch and the Librarian of Congress is a Presidential appointee subject to the confirmation by the Senate. It's budget is not subject to OMB review.

2. All three are major research libraries. However, NLM and NAL specialize in single disciplines; LC is a multi-disciplined library collecting in all subjects except the subject areas of the other two. LC also has statutory responsibility to serve as a major research arm of the Congress through the Congressional Research Service and to serve as the National Register for Copyright through the Copyright Office. Thus LC has a much larger staff and budget

---

[1] Leach, Richard H., "A Broad Look at the Federal Government and Libraries" in Libraries at Large (New York: R.R. Bowker, 1969), p. 353.

[2] Ibid.

than NAL or NLM. NLM supports research throughout the nation in medical informatics and provides resource and research grants to improve health sciences information services to health care professionals. NLM also supports a discipline oriented network of health sciences libraries, the Regional Medical Library Program.

3. NLM and NAL's responsibilities include indexing. In general, LC, because of its responsibility for multiple disciplines, and multiple formats, and the size of its yearly acquisitions does not assume this responsibility. Both NAL and NLM develop non-bibliographic databases related to their disciplines.

Given these differences, we proceeded to discuss our similarities, which have been summarized as our responsibilities in the following general statement: The three national libraries have the responsibility, within their respective discipline(s), for collecting and preserving materials, for providing access to materials in their collections directly to researchers, for providing basic bibliographic tools and information for the entire user community.

Our deliberations concerning the vision of a nationwide library network were based on the following assumptions:

1. There would be more than one bibliographic utility.

2. The network would be a distributed network, i.e., those operations best performed locally, would be performed locally, e.g., serial checkin, circulation, acquisitions, reference. Those operations best performed centrally, would be performed centrally, e.g., a central file of location data for use in interlibrary loan activities, shared cataloging.

3. Standards would be adhered to.

4. Data will be transmitted in a variety of ways, magnetic tape, laser disk, on-line.

5. The public and the private sector will coexist but with varying degrees of cooperation and friction along the way.
6. There are significant problems to be addressed concerning the economics of networking. However, with time, experience, and streamlining, library networking would be economically viable.

To describe our vision, it was also necessary to set the timeframe we were considering and to determine whether we were primarily concerned with a network structure or network functions. We all agreed that the library network we were envisioning was not static in nature but very dynamic due to the rapid changes in technology. Therefore, we set the period under discussion for five years into the future. Naturally, the structure of a network is also affected by the potential offered by the latest technical advances. In order to formulate a model upon which to base the remainder of the discussion, we determined that without getting involved in technical details, we could lay out the various components of the evolving network and their relation to each other. And so--the vision:

The national libraries component will provide products and services via printed, microform, magnetic tape, laser disk distribution and online transmission. The latter will involve terminal-to-computer as well as computer-to-computer communications. Through the facilities of a linking system, the three libraries will communicate with each other, with the bibliographic utilities, and with certain stand-alone systems (the latter systems could be different for each national library, e.g., NLM linked to medical centers).

The bibliographic utilities component will provide a database resource for shared cataloging and inter-library loan as well as for numeric and full text data. Gateway services to access other database services will be available for the membership. Through the facilities of a linking system, the utilities will communicate with each other for applications which are demonstrated to be economically viable for each utility. Each utility will also be linked to regional, state and local systems, downloading and uploading bibliographic and location data.

The regional and statewide component will, when it is considered effective to do so, provide a database resource for shared cataloging and interlibrary loan as well as for numeric and full text data for the region and/or the states. Through linking facilities, systems on the regional or the state level will communicate with each other, with the bibliographic utilities, and with local systems.

The local system component will provide the library operations which are most efficient and cost beneficial to perform locally as well as access to resources of bibliographic data. Through a linking facility, original cataloging data (bibliographic and authority records) will be communicated to a central node. (This could be a state-wide agency, a regional agency, or a bibliographic utility.)

ROLES

It is difficult to make general statements concerning these institutions which do have some significant differences. To overcome the problem, it is tempting to say for example, LC produces the National Union Catalog, NAL, the Bibliography of Agriculture, NLM, Index Medicus and on, and on. In the interest of keeping this presentation brief, it was necessary to state the roles we believe national libraries play in the evolving network by including within one general statement, a list of functions, or products and services, etc. which in all cases, are not necessarily true for each institution. I am sure you will recognize those instances where we have taken this liberty and bear with us. Our roles as we see them are given below:

I. To develop collections in the areas of responsibility of the three national libraries, thereby providing a comprehensive national collection of research materials.

II. To provide access to the materials in the other national libraries and in other libraries in the U.S. and other countries through interlibrary loan. This is facilitated by the use of union lists of monographs and serials holdings, and online document request and routing services.

III. To preserve our collections by conserving materials and/or copying original materials, and informing the community of the availability of such copies. All three national libraries microfilm materials. In addition, LC is engaged in building a mass deacidification facility, planned to be operational in early 1988, which is expected to extend the life of treated items by hundreds of years.

IV. To provide and improve access to information through the provision of bibliographic control products and services: printed bibliographic products (hard copy and microform), machine-readable bibliographic records, printed name and subject authority records (hard copy and microform), machine-readable name and subject authority records, classification schedules, indexing services, selective dissemination of information, and online retrieval.

V. To provide quality bibliographic records following established standards. Such standards include the AACR2 cataloging rules, the International Standard Bibliographic Description (ISBD), name and subject authority lists, classification schedules, the ANSI Z39.2 format structure, USMARC format content designation, MARC code lists, etc.

VI. To provide quality bibliographic records as quickly and comprehensively as possible. This includes both prompt cataloging of materials, rapid conversion to machine-readable form, and timely dissemination of the machine-readable records and their products.

VII. To provide as much quality original cataloging in machine-readable form as possible at a reasonable cost in order that other libraries can avoid the high costs of original cataloging.

VIII. To share the resources of the national libraries with each other and with other libraries, and to promote resource sharing among libraries nationally and internationally.

Resource sharing programs include the MARC Distribution Service, CONSER, the Linked Systems Project, the MEDLARS network, the Regional Medical Library Network, the Name Authority Cooperative Project, the compilation of union catalogs, serials holdings lists, bibliographies, etc.

IX. To establish and/or maintain national standards, in association with other organizations, to include ANSI Z39.2, AACR 2, the International Standard Bibliographic Description (ISBD), name and subject authority lists, classification schedules, the USMARC format, the MARC languages, country of publication, and geographic area codes, computer-to-computer protocols, etc. Many of these standards are also used internationally.

X. To serve as the international interface between the U.S. and other countries with respect to resource sharing.

Responsibility includes involvement with international organizations for the establishment and maintenance of international standards for the creation of bibliographic records and the exchange of these records in machine-readable form, as well as the interface with national libraries abroad to encourage adherence to standards. These standards include ISO 2709, AACR 2, ISBD, the UNIMARC format, and the International Serials Data System (ISDS) format.

XI. To improve access to information through nonbibliographic databases and services, i.e., access to information through traditional and non-traditional reference services.

XII. To perform research in such areas as optical disk technology, expert systems, acquisition and processing of electronic publications, subject heading systems, etc.

CONCLUSION

Today most materials acquired for the collections in the three national libraries are printed works or audio and/or visual materials; however, in the near future an increasing number of works will be published in machine-readable form. Machine-readable materials which can be updated frequently will call into question current concepts of "final" publication and will present an array of new issues for acquisition, bibliographic control, access and preservation. Ownership, hardware necessary for use, and legal aspects of the misuse or quality of the information provided may become increasingly significant issues.

Other issues will include preservation of unique copies, use of optical disk technology, the relation of copyright to the preservation and use of materials created through the new technologies, direct user access to information and the changing roles of the public and private sectors. Despite an uncertain and challenging future, we are certain that the three national libraries will continue to play a central role in the networking activities of the United States.

REMARKS ON THE ROLE OF REGIONAL NETWORKS IN NATIONAL NETWORKING

Louella V. Wetherbee
AMIGOS Bibliographic Council, Inc.

My role is two fold. First I am going to summarize the results of the NAC survey of network directors. Second, I will comment briefly on my view of the evolving role of regional networks in the current nationwide network.

RESULTS OF SURVEY

1. What is the vision of nationwide networking among network organizations?

   - Facilitate technology transfer among libraries.
   - Emphasize training in new technologies.
   - Provide a wide variety of services, beyond cataloging.
   - Provide these services at least cost, in a timely fashion.
   - See the continuation of all the utilities with their eventual linkage at national level.
   - In broadest sense "nationwide network" should link all possible information sources in cooperative programs.

2. From the regional perspective, what is the strategy for realizing this vision?

   - Avoid concept of a "national network" = think rather of nationwide networking = bottom up, not top down.
   - There is a clear need for national leadership to determine common goals, agree upon milestones and develop rational and stable funding sources.
   - Networking will prosper only when clearly perceived to be in the best interests of participants.
   - Somehow the willingness to cooperate must increase.
   - Must recognize how local systems will affect networking patterns.
   - Perhaps LC or NCLIS or NAC should organize a major planning effort to forge national consensus.

- In general, move to emphasis on cooperation, away from competition.

3. What are seen as barriers to developing a national consensus?

   - Barriers are personal, human -- i.e., ego, image, power are the words used.
   - Lack of understanding about what cooperative is and what it requires.
   - Improper attention to importance of standards.
   - Much duplication of service is occurring.
   - Cost of cooperation is a perceived barrier, especially to smaller libraries.
   - Capturing bibliographic data and holdings information in local systems environment for future cooperative uses is becoming a serious problem.

4. What is the role of regional networks?

   - Participate in network planning.
   - Maintain commitment to national effort in resource sharing.
   - Preach benefits of cooperation.
   - Act as library advocates.
   - Act as change agents in a fluid technological arena.
   - Cost sharing is seen as a major institutional role.
   - Help serve unserved, especially smaller poorer libraries.
   - Assist in creation of local/state data bases.

5. How do the regionals see the role of other players?

   - Federal sector
     Planning, funding, promotion of standards.
   - LC
     - Continue to support MARC tape distribution at reasonable cost.
     - Continue as bibliographic control leader.

  - Promote adherence to standards.
  - Investigate new technologies for the whole community.
  - Promote linkage.

- NCLIS
  - Community think tank.
  - Listen to all voices.
  - Raise concerns of non library sectors of the information community.
- State Agencies
  - Address needs of small libraries.
  - Promote multitype networking.
  - Not expect the same programs across nation.
  - Networks "serve the converted", while state libraries create new converts.
- Role of regionals as seen by themselves
  - Primary promoters of networking goals, concepts in the field.
  - Value added distributors as well as service developers and program coordinators.
  - Provide fiscal, administrative and training interface for national programs.
- National utilities
  - Leaders in R&D
  - Help determine what is best done nationally and do it.
  - Maintain data bases, with a special concern for their quality.
  - Work toward links and try to reduce redundant effort.
  - Talk together more.
  - Avoid services better supported in commercial sector.

- Role of funding agencies
    - Focus on activities that have broad impact, not on single institutions.
    - Attempt to establish more consensus on funding priorities.
    - Require strict accountability.

END OF SURVEY RESULTS SUMMARY.

As I prepared my own brief remarks on the role of regional networks in nationwide networking, I had the benefit of reviewing the responses summarized above. In addition, I also reflected on the mission of my own network, the AMIGOS Bibliographic Council. AMIGOS is a true "regional" network. We serve all types of libraries in nine states across the Southwest. Our mission statement reads as follows:

The network "...will provide a diverse and comprehensive range of library and information products and services that support and enhance member library programs and at the same time promote regional cooperation and resource sharing."

Such a goal seems straightforward. We should be able to find ways to promote resource sharing in the broadest sense while assisting individual libraries with individual goals. However, I think accomplishing both goals simultaneously is going to become increasingly difficult. Perhaps we have to recognize that in the current environment of rapid technological change, these dual goals may not be complementary and one will eventually take precedence.

What is the role of a large regional or state network in the development of a national network? Where and how do regionals fit in? How are regional networks and specifically how is AMIGOS helping to forge a common vision of networking?

Are we effective advocates for sharing resources and developing cooperatives where the common good of all is a high priority although not the only priority? As regional networks are increasingly forced to behave like vendors, the impetus to develop cooperative projects tends to dry up.

Are our programs increasing linkages or breaking them down? We need to ask ourselves if new network programs contribute to the development of resource sharing goals or serve only parochial interests.

Do we understand how best to serve individual library needs in a cooperative environment? Increasingly it appears that the needs of a local library to meet its own goals may be in conflict with group goals. It seems dangerous to have the tension continue. Certainly cooperative programs can succeed only if they are perceived as beneficial to local libraries. Cooperation must grow out of local needs.

Are we helping libraries avoid the unnecessary expense and wasted effort of redundant programs? As networks develop new programs, it is important to emphasize to members the benefits of avoiding duplication. This is often difficult now because of the appeal of local and distributed systems which permit individual libraries to create their own "network".

Where do regional networks fit into the common vision of networking? It is not clear to me that there is a clearly understood or accepted common vision. It is clear to me that there is a decline in interest in multitype cooperation which may be a threat to national networking goals. If we continue to believe there is value in sharing across types of libraries, then we must be more aggressive in promoting multitype cooperation.

It is clear that the watchword in library automation is "local". Purely local development activities are redefining cooperative structures. We can no longer assume a local commitment to national, regional or even state wide cooperative programs.

We are beginning to see the fragmentation of the de facto national database. Decentralization of machine-readable bibliographic files is now occurring. It seems rather unlikely that we will rationally plan a distribution of the database with clear built in linking mechanisms. Rather we are going to see a patchwork quilt of local and regional systems develop without the linking mechanisms built in. This will probably mean less attention to creation and maintenance of standard bibliographic records.

As local systems and consortia develop, there are more "players" than ever before. Every library has the potential to become a mini bibliographic utility and network hub for the local community, county or campus. Consequently, the existing "players" such as regional networks spend more time influencing the political environment, or at least endeavoring to understand it, and less time devoted to program development and service delivery.

All sectors of the not-for-profit library community, including national utilities, regional and state networks, and local institutions, are moving toward a competitive market driven model. Such a shift seems inevitable given technical and social trends in the larger society. However, I do not feel confident that such a competitive environment will be one where cooperation and resource sharing can prosper. Especially endangered will be those risky cooperative projects which may have no immediate economic payoff but do have intangible long term social benefits. An example might be cooperative union lists.

From my perspective as the director of a large regional network, my vision of the national network is clouded. I continue to hope that we can pull together and realize the broad societal benefits of a voluntary cooperative national network. I believe that in order to realize that "common vision", we must deemphasize parochial self interest and refocus attention on the shared rights and responsibilties of participants in a cooperative community. Such a process can only begin with us as individuals.

STATE LIBRARY IN NATIONAL NETWORKING

James A. Nelson, State Librarian and Commissioner
Kentucky Department for Libraries and Archives

While there is considerable variety in the way each state agency is organized, in the priorities they choose to emphasize and in their relative strengths or weaknesses, some characteristics are common to most. These issues are relevant to deliberations of the Network Advisory Council and to general concerns about network development in this country.

To begin with, it is normal and appropriate for all state agencies, not just library agencies, to be concerned about equalization of services and access to resources. This equalization concept is complemented in most library programs by a focus on the "end user" through local public libraries. Like networks, state library agencies are only successful in getting the individual good service if the local institution is effective. It is also generally true that most state agencies are involved with some level of effort in networking and library cooperation. Certainly the evolution and growth of the Federal LSCA Title III program has forced this as an issue in every state.

Another shared characteristic among state library agencies is that they are well positioned to influence both state and federal legislation and funding through coordinated lobbying efforts. Since libraries serve the public good, they legitimately deserve public support. This is an important component to networking on the national level for some obvious reasons. All network organizations are dependent on financial resources and the legal environment in which they operate, so these shared characteristics are particularly meaningful.

With state agencies sharing a concern for equal access common to others in the networking business, and since they are in position to affect the funding and legal issues which impact networking, there are issues which I believe must be addressed by the state as we all move ahead.

First, we must all work to develop a more clear concept of what business we really are in. This issue embraces the shared concern that the technology, as critical as it is, is really a tool for our industry -- the knowledge and information business. This self concept is found in **Pygmalion** when Eliza Doolittle is complaining to a friend that, even after creating her polish and style, Professor Higgins still sees her only as a flower girl and to him she will always be a flower girl. To some, our networks are just a bunch of computers hooked up together and perhaps will always be that. I guess this is why we are trying to create a shared vision -- this will give us all the concept to build our collaborative efforts from.

Another issue which state agencies must share a responsible partnership in resolving is leadership. Once, when asked how I would define leadership, I replied that it was mainly communication and action. Rob McGee said it was more than that; it is Communication, Action, Support and Help --

CASH! Maybe he was right, but leadership is critical and we can't only look to the large utilities and our large institutions (like the national libraries). A former Kentucky Governor, Bert Combs, serves on our State Council on Higher Education and at a meeting of another group, he was taking some licks for the Council and its lack of leadership. His comment was, "Well, you know, it's like they say up in New Jersey -- we're bigger than a jury, but smaller than the Mob." That's also true of our large utilities and institutions -- we all must share in developing leadership, especially the state agencies.

Since state agencies are political in nature (we all are, but some of us live and die with politics), it is important to realize that the technology can give us leverage in the political arena. Nowadays, political types realize that we have to deal with computers. They may not understand the "whys" or other issues of automation, but they think we have to buy lots of computers. The technology, however, is also driving a wedge between the information haves and have nots -- we are, as Roland Brown said, truly creating an information elite. State agencies need to protect our people from that and the library profession as a whole has to turn this tide ... no matter how the technology helps us gain credibility with our resource allocators, it cannot be at the expense of our people.

I hope we can capture a common vision and clarify our concept of the networking business. We need to use shared vision, the conceptual essence of what we are doing, to help managers of even the smallest libraries think in those larger terms. With an eye on their neighbor who just walked in the door and a concept of their business that is larger than the neighborhood, we could go a long way to creating the environment we all seek. In Kentucky, we are trying to do this with a "Full Service Bank" concept -- we plan on having each member library of our network display a sign which says, "This library is a member of the Kentucky Library Network" with the hope that it will be part of a promotion which will help the librarian and the community expand their concepts of the service we provide.

I sincerely hope you will see the emerging leadership of state-based networks flourish and grow into a symbiotic pattern of national leadership we all will share. We need the critical mass this would create to build the influence and create the resources which will be required to do the job we all know needs to be done in the years ahead. In some issues, leadership responsibility may be as simple as the general rule of thumb in Kentucky politics: "Vote early...and often." Perhaps this idea can work elsewhere, and I commend it for your consideration.

SUMMARY OF PRESENTATIONS FROM PRIVATE SECTOR REPRESENTATIVES

Charles Bourne, the Director of the General Information Division of DIALOG Information Services, Inc., was the first of two speakers representing the private sector and began his speech with the disclaimer that he was speaking only for DIALOG, not for other online system vendors in giving his vision of the future of library networks and the role of his organization in the network.

Bourne stated that he believed the interpretation of networking definition and premises that were distributed for this meeting are quite appropriate, as long as a very generous interpretation is given to some of the terms used, in order to be sure that: (1) the provision of reference information is included along with the implied cataloging and location information; (2) the delivery of source information is included, not just the traditional delivery of a book; and (3) that all types of institutions are included.

To the question "what is the role of DIALOG in library networking?" Mr. Bourne responded that he sees DIALOG as already participating in and providing a significant contribution to library networking (nationally and internationally), and he expects DIALOG to continue to be a major participant. DIALOG believes that they are already networking. A few points of relevant background information are:

- DIALOG is already used at over 60,000 terminals in libraries and other locations worldwide (several times the total numbers of terminals of all of the shared cataloging network services combined).
- DIALOG already has online files of significance intended for use by library technical processing departments and others including: The Library of Congress MARC and REMARC files, Books in Print, Ulrich's International Periodicals Directory, Ulrich's Irregular Serials and Annuals, plus over fifty million online references in other bibliographic files and other source information such as corporate balance sheets, journal text, and news text.
- DIALOG already has the infrastructure for training and customer support services to the library community. They help provide "terminal literacy" training and functional online training worldwide to over 16,000 professionals per year.
- DIALOG has its own telecommunications network, with nodes in fifty-two American cities, and leased lines to Europe and Japan.
- DIALOG already has the means to facilitate interlibrary loan and document delivery service worldwide. About one hundred participating institutions (e.g., British Library Lending Division (BLLD), National Technical Information Service (NTIS), Educational Resources Information Center (ERIC), and commercial information brokers) accept online ordering information from DIALOG user's.

- DIALOG already has the technical means for linkage to other computer networks services. They have a gateway linkage now to several extended services (e.g., Mead Data Central's LEXIS service and the Official Airline Guide) and can in principle do it also for the bibliographic utilities. ·

- Other current and relevant activities include:

  DIALMAIL -- A means to permit immediate communication worldwide between any of DIALOG's sixty thousand participating users, including means for bulletin boards, conferencing, multi-copy distribution, and general broadcasting. This should replace existing interlibrary loan by telex.

  CD-ROM -- DIALOG is working to develop alternate means of delivery of information and reference tools to libraries.

  Software Development -- DIALOG is working on the development and release of software products for libraries.

DIALOG's view of their role in networking is that they are continuing as an existing and logical part of an array of services available for choice by the users, depending upon their particular needs and constraints. They see the possibility for considerable dial-up linkage and menu options to permit the terminal user to communicate with other users and access many systems of choice.

DIALOG sees the federal sector as continuing in the development and distribution of collections, databases, authority files, and standards. They urge that this data be made available at the lowest cost possible, (i.e., tapes made available royalty-free or at a minium fee for tape copy cost recovery) in order to allow access to the end users at a low cost and with widest possible dissemination.

Eugene Damon the manager of Advanced Development with Geac Computers International, Inc., was the second speaker representing the private sector. He quoted the letter inviting Geac to participate in this meeting asking for "your vision of a nationwide network..." Now when one thinks of a vision, what comes to mind is the picture of a bearded and emaciated ascetic in the desert wilderness who has some form of mystical experience. With this picture in mind one is tempted to comment on the idea of networks, wilderness and mystical experience, however..., I come from Toronto and there we do not have deserts and are rather too frequently faced with "cold" reality. So what I will talk about is not so much a vision but rather some observations. None of these observations are spectacular or new, but all are important to our discussion and the definition of the role of a vendor in a nationwide network. These observations will be followed by some statements of belief about that role.

One of the problems encountered in preparing for this presentation was that of knowing what we are talking about when we talk about networks. With apologies to the late Jesse Shera, the following analysis is suggested:

- Networks are successful therefore they must be meeting a need, i.e., they must be solving some problem.
- Identification of the problem and why networks are a solution could enhance our discussion.
- One possible statement of the problem is that there exists a tension between the practical economic necessities encountered in the management of access to recorded knowledge and the ideal that all persons should have full access when and where needed.
- Networks are a solution, or seem to be, because they can act to relieve that tension by creating the illusion that everything is accessible from everywhere.

Thus we can arrive at a working definition that a network is the bringing together of the technological and human resources to create the illusion, that, in terms of recorded knowledge, everything is accessible from everywhere. Networks seem then to provide a means of solving the old library problem of decentralized versus centralized service when economics does not allow for the maintenance of decentralized services.

Some of the key facts which will influence the nature of this illusion are as follows:

a) The cost of processing power is decreasing very rapidly. The result of this is that the locality of a given function becomes less and less restricted.

b) The cost of processing power is decreasing faster than bandwidth when that bandwidth is used for two way communications. In fact, in some cases the apparent cost of bandwidth is going up, e.g., AT&T's long line services.

c) The cost of one way bandwidth is however decreasing rapidly. In this category is included communications devices such as optical/laser disks.

The combination of these two facts (b & c) means that some of the past economic gains of networks may not be present in the future.

d) User needs and expectations are changing rapidly in light of their understanding of these other facts. As a result of this change in expectations, traditional distinctions between network types, i.e., information retrieval, library service, and intelligence processing, are disappearing. That is to say, we cannot force old forms and distinctions as to user categories on the operation of networks of the future.

It should be noted however, that in some cases self-proclaimed experts in the field have pushed expectation beyond what is in fact currently possible in a pratical sense.

e) The rapidly maturing standards activity, particularly the International Organization for Standardization/Open Systems Interconnection (ISO/OSI) model work, is providing a base for successful implementation of more sophisticated networks in the future. Examples of this are quite numerous such as the Limited Systems Project (LSP) in the United States and the work of the Office of Network Development at the National Library of Canada.

Given these influences, what can be said about the nature of networks in the future? Again, both at this meeting and elsewhere the key points have been suggested.

a. Because of the rapid change in a number of these influences, a major characteristic of networks in the near future will be change.

b. It is unlikely that there will be a single nationwide network. There will be instead, many networks which will slowly develop agreements for interconnection and as a result define a defacto nationwide network, that is a network of networks.

c. There will be three types or categories of networks, local, regional and special interest. By special interest, it is meant those networks which evolve as a result of group of users coming together because they have common interests or special needs. These networks which are neither local nor regional and in fact may be national in scope, e.g., the Research Libraries Group, Inc. (RLG), will be major players in the network of networks.

d. Given the increased processing power at the local and the user level of systems and the increased cost of communication, the larger networks will become more concerned with the exception processing. That is, the larger networks will be more concerned with the extension of services rather than the provision of basic services.

Basically the role of the vendor will be what it has been in library automation generally, to provide tools for the user (library) to implement their own solution to the problem of managing access to recorded knowledge.

Specifically with regard to networks, the vendor will be involved in one or more of three ways:

as provider of the technology required for the operation of the network, e.g., providing a local network for a public library system;

as server on a network provided by some other body, e.g., on-line query service in a campus network;

as interface to another network, e.g., posting and routing messages to a public utility's electronic mail service.

in support of this the vendor should (1) provide the hardware and software which will meet the standards established for the interconnection; (2) carry out robust programs of research and development which extend the technology offered to the customer; e.g., Geac's five year information utility project; and (3) be involved with the standards making groups both in definition and in prototyping systems to implement the standards, e.g., Geac participation both directly and through customers in the work of the National Library of Canada's network effort.

SUMMARY OF PRESENTATIONS FROM LOCAL SYSTEMS REPRESENTATIVES

James F. Govan, the director of libraries at the University of North Carolina at Chapel Hill was the first of two speakers representing local systems and began with the observation that to some extent the configuration of a nationwide network will be determined by technology. The exact configuration is largely beyond predictability. Whatever the technology, there will probably be a central national database; however it is structured physically, the most important aspect is that there should be no barriers to access. The centralized database will provide access to data for cataloging, location, and cooperative efforts in such areas as collection development, preservation, and special cooperative cataloging projects. The network would also monitor and perhaps coordinate national cooperative efforts. The network may well offer other services: information sources, new communications systems, full text retrieval.

The network of the future will be equally shaped by technology and economics. Librarians are so fascinated by their sudden perception of information as a commodity that they have almost forgotten the basic raison d'etre: learning and research.

Local networks will be dependent on the nationwide network for the above services, just as the nationwide network will be dependent on local systems for contributions of records and direct delivery of services to the user. Each must be sensitive to this interdependence and responsive to the other's requirements, for neither will survive without the other, and both will be hard pressed to obtain the necessary resources to keep the system operating.

Local systems will take several forms: they may consist of one library, or a cluster of libraries, or elements of one library such as the rare book collection or the science library. They will provide online cataloging and a catalog, with other in-house services like circulation, acquisitions, and online searching also available. A major function will be their interaction with on-campus databases and research centers and links with office and home information services.

The primary local contribution to a national system is the delivery of direct access to users. This is, in fact, the reason for all the rest. Local systems will provide records of original cataloging to a national database. This is the basic example of interdependence. Those who do not use the national system for cataloging must observe this obligation, or there can be no national database for any purpose.

Other possible contributions that local systems may make include:

- Filtering searches that can be conducted locally, relieving the nationwide network of heavy load of transactions.
- Increasing lateral transactions not involving the national level.
- Affiliation and communication among libraries of similar character and needs.
- Serving as a gateway to national systems for number of local libraries that do not belong to national systems and as a channel for records needed at the national level from the local libraries.

In evaluating the development and ramifications of local systems Govan noted that both technology and activity push for decentralization. Local activity and campus involvement is increasing and local personnel are improving. He anticipates far more complex systems, and more experimentation. The local level will probably carry forward refinement of local systems and interface with the user. In depth subject and content analysis is such large task that it will probably be done locally. Functions that are now seen as regional will thus evolve on local systems.

National organizations must recognize these trends toward independence and benefit from them. Local systems must maintain strong ties to the national level in face of decentralizing forces. In midst of great flux, both should collaborate on identifying roles and assigning responsibilities. Organizational mechanisms must be created to allow and even encourage this shaping of the evolving network.

This is not the world of fifteen years ago, and by the end of the century, it will be changed more from today than it has changed since 1970. Govan opposes any centralization that hurts local efforts and any decentralization that undermines a nationwide network. This is not a pious ideal but simple practicality. There has been too much concern with technology of local systems and even local libraries; networks should be equally concerned about being service oriented and providing fiscally responsible programs.

Edwin B. Brownrigg, director of the Division of Library Automation at the University of California in Berkeley, stated that telecommunications for libraries has yet to realize its full potential. Among libraries, so-called library networks, and governments there is a lack of guiding telecommunications policy. Librarians and politicians do not understand the technical aspects of data telecommunications. Between them there is a dearth of understanding about the economics and the politics of telecommunications appplications for libraries. He submitted the thesis that libraries must do more than merely consume telecommunications services - they must provide telecommunications, just as they provide books and other information media.

Brownrigg provided a brief summary of relevant milestones in the development of telecommunications. Telephony and telegraphy had begun as wire-based services. The content of the wire was analogous to the print on letters carried by the post office, and the wire was analogous to the post roads. Thus common carrier legislation seemed appropriate to telephony and telegraphy before it became wireless. Because carriers were often monopolies, at least locally, the law required them to serve their customers in a common and impartial way. And like the law of the press, the law of common carriage was intended to protect free expression.

With radio broadcast, however, a very different and much less coherent body of law emerged. Unlike the law of the press that sought to preserve freedom, and unlike the law of common carriage which fostered equality of service, the law of wireless broadcasting was one of deliberate regulation and control. Radio technology was unlike anything American law makers had encountered. Congress considered only four choices: (1) create a government monopoly over radio (as had happened in Europe); (2) apply common carrier law to radio; (3) leave radio unregulated like printed publishing; or (4) make radio a regulated commercial activity. Congress chose the last option for several reasons: (1) because of the political undesirability of a government monopoly; (2) because of the impracticability of applying right-of-way to a broadcast medium; and (3) because Congress viewed literate communications more permissively than it viewed mass communication.

Between the early 1960's and the mid-1970's the government labored to keep computing and telecommunications separate. But computer timesharing, electronic mail, and database services diluted those artificial regulations.

Brownrigg believes that if libraries must be providers as well as consumers of books and journal articles, they must be providers as well as consumers of telecommunications, since libraries use telecommunications as part of the processes of collecting, preserving, organizing and disseminating library materials.

If the economics of the library model are to remain consistent vis-a-vis telecommunications, then the telecommunications media and protocols used by an informee to access library materials must be at fixed rate of cost. In other words, the library would provide the telecommunications. But how are libraries to do this? The choices involve primarily radio broadcast technology, and they are all examples of a greater or lesser degree of bypassing the standard commercial common carrier telecommunications services.

There are four telecommunications media: wire, coaxial cable, optical fiber, and wireless radio. If libraries are to provide private telecommunications without incurring the costs of common carriers, then they will have to use some small measure broadcast technology. This is true for three reasons: (1) when library users begin to enjoy the fruits of telecommunications, the volume of telecommunications that libraries will grow significantly; (2) advances in packet radio technology now allow libraries to deploy a nationwide telecommunications network of several sharable data channels with bit rates from slow (300/second) to fast (200,000/second); and (3) new private satellite and private terrestrial microwave companies provide data links that are not subject to common carrier regulation, but to broadcast regulations that favor public-service and big-business use of spectrum.

For libraries, where literacy is an obvious factor, the way is becoming clear to extend their basic functions via telecommunications public policy. Today for the first time there is an unprecedented fusion of the library book catalog and the privately published bibliographical services into single electronic systems. New computer-to-computer telefacsimile standards guarantee a growth in library services through telecommunications.

At the heart of the library profession's opportunity to provide cost-effective telecommunications are the technology of digital radio broadcast and the Federal Communications Commission (FCC) regulations to which such use would be subject. The technology is available, and it is extremely competitive with common carrier alternatives. But there is no public policy explicitly set forth in Title 47 of the Code of Federal Regulations for this particular application. There is, however, a longstanding precedence for FCC regulation to perform in the public interest. Where literacy is the requirement for public communication the law has been permissive.

Now is the time for the library profession to merge the issues of traditional library service with new technological opportunities for improved service, and to do so in light of existing public policy on the use of the electromagnetic aether. Libraries are generally left alone by federal injunctions, as were the literate beneficiaries of the First Amendment.

These perceptions are not within the character of federal policy, but rather of local policy. Thus there are listed in the American Library Association some 344 organizations in forty-six states and the District of Columbia that are actively engaged in multitype library cooperation. In addition, thirty two states have adopted the interstate library compact which proposes to establish an interstate library district to be approved by the state attorney general and administered by the state librarian. The tendency of multitype library cooperative legislation at the state level is toward a nationwide network, but a legal framework for such cooperation at the federal level has not yet emerged. But if telecommunications via radio technology is to play a significant role for libraries, then the federal government will have to grant libraries a license to protect literate telecommunications.

Now libraries are at a moment in their history when they can greatly extend and enhance their basic services to informees via telecommunications. Federal regulation of telecommunications seems disposed to permit libraries to monopolize through private interstate library compact, avoiding common carrier tariffs, as long as they continue the tradition of conveying literate communications. The collision of computing with telecommunications has caused the FCC to allow these industries to compete openly in a free market, but still within federal regulations.

In a future vision where the nation's information needs are met through a network of networks, libraries must do more than consume telecommunications: they must provide them. Radio bandwidth can be set aside for educational or library purposes and avoid current telecommunications tariffs. This is the approach the University of California is following in developing its state-wide library network.

A USER'S VIEW OF NETWORKING

Barbara Cooper, Chair
White House Conference on Library and
Information Services Taskforce

The Network Advisory Committee is to be commended for giving a user representative the opportunity to listen, learn and give input to a meeting planned as another step toward access to information resources for all users. As NAC continues this planning, it should consider offering a similar opportunity to other representatives of users.

My first exposure to networking was as chair of our state planning committee which worked for two years to produce the Florida Governor's Conference on Library and Information Services. This was followed by a third year preparing for the White House Conference. Betty Taylor was our guide to networking; twelve of the 58 resolutions of our state conference in 1978 (2/3 citizens and 1/3 professionals) related to networking, a good example of how important it was that networkers participate in state conferences. Now, as chair of the White House Conference on Library and Information Services Taskforce (WHCLIST), I work for implementation of the recommendations of the 1979 White House Conference, which include many on networking. They also include a resolution calling for a second White House Conference as early as 1989.

The National Commission on Libraries and Information Science has just received a report from its Preliminary Conference Design Group setting forth a plan for organizing the future conference. This report specifies roles for you as networking representatives to be involved--on the national level, within your associations and organizations, and within your states. The complete process now begun with introduction of legislation in the Congress is critical to the future of the library and information services community--setting agendas, publishing papers, organizing programs, reaching agreement, marketing future legislative initiatives. In some instances the actual conference will be a ratification of what has been worked out during the planning phase. Therefore, the conference process should not be looked upon as something which begins when funds for the conference are appropriated and the President sets a future date. Instead, it can be a process during which participation brings a vision of a national network to fruition through discussion, planning and public awareness.

Recently a local newspaper quoted Frank Rodgers, University of Miami library director, on computerization: "It's that access question that will be the key to how well libraries will do their jobs in the future. It's not how much you have, but how quickly you can get it." When I asked about user's needs at my library in Fort Lauderdale, I was given this word: "timeliness". The steps being taken toward timeliness and greater resource sharing in my area are not unique, but they represent a first cooperative effort of public and academic library interests. My county (Broward) and Dade County (Miami) are creating the Southeast Florida Library and Information Network (SEFLIN) as a pilot for the state, with LSCA dollars. The Miami-Dade and Broward County public library systems are joining with the two public and one private university libraries (Florida International, Florida Atlantic and

Miami) and the two community college libraries, to establish a network to answer the question: "How can we share what we have?". Early in 1986 the institutions will be tied together with a facsimile system (transmitting ten pages or less, within 20 minutes) and a daily courier service (for other materials). The second year they will add a union list of serials (seven lists) and cooperative reference service. The third year they will share bibliographic data bases through one terminal. A long-term hope is that cooperative reference service will lead to cooperative collection development.

This use of LSCA dollars points up how important funding at the national level is. Local funding for new projects is scarce. For example, it costs $40,000/year to maintain our eight PLATO terminals. We have been unsuccessful for two fiscal years in getting a staff position funded to exploit the opportunities offered to the user by PLATO. Dependable volunteer support for the hours the library is open is not likely. The staff is aware of more essential user needs and wonders if the money can't be spent better on them. Even with a growing budget, priorities must be set.

When most users approach terminals in libraries, they need help. One volunteer who assisted users in learning the new ALIS terminals in Fort Lauderdale said that people seemed delighted and found using it easy. People trust the librarians to make access easy. They have no interest in where the data comes from, how it is financed, and what jurisdictional questions had to be solved to provide that access.

As a state library trustee watching the development of interlibrary cooperation, I can see how important this agency is to networking. While the role of the state library varies from state to state, the view of lay supporters in most states is that they represent the needs of users fairly successfully. It is essential that the various library interests present a united front to state and national legislators, and the state library agency seems to be the appropriate coordinator. In Florida it was the state legislature which requested the state library agency to act in such a role for interlibrary cooperation among public, academic and, it is hoped, school libraries.

One problem that I foresee is that of fees. My local library system will, in the future, need to recover some costs of in-depth searches for users willing to pay for them. Free access is interpreted strictly by the state library as a requirement for state and federal funds. This point was a focus of vigorous discussion at the 1979 White House Conference, and the strict interpretation carried. My personal view is that the library's role as information provider will be handicapped by inability to charge for sophisticated searches for those able to pay. The requirement for free access can be met by specifying appropriate free service.

Each year WHCLIST publishes its Report from the States, prepared by state librarians. In the sixth annual report made for our September 1985 meeting in Princeton there were responses from 45 states and 3 territories. We asked the question: "What do you recommend as the three most important agenda items for a 1989 WHCLIS?" Some answers were consolidated as follows:

Resource sharing and interlibrary cooperation among all types of libraries	19
Access to information for all people; fees	13
Impact of automation on all types of libraries, especially small, rural	6
Issues relating to national resource sharing	5
Telecommunications and networking	5
Document and facsimile delivery over distances	2
Need for standardized package of linkages between all systems	1
Creation of a national library network and a national library	1
Role of libraries vis-à-vis other information providers	1

My personal view is that funds for networking and sharing resources will become more appealing to legislators in the future. The "Report of the Commission on Freedom and Equality of Access to Information" to the American Library Association of 1985 (draft) contains this:

"We recognize fully that in a time of budgetary stringency, like the present, it is unrealistic to expect large new funding, especially for objectives only generally defined. The immediate need is for the library profession in conjunction with other concerned groups, to develop concrete and realistic programs to meet the most acute needs and to lay a careful basis for a successful request for appropriations."

If the library and information community can come up with a plan for providing better access and resource sharing through use of technology, another step forward in federal funding could take place. The 1979 White House Conference resolutions call, in general terms, for the very things NAC is now able to discuss in great detail. It is often said that while twenty years is a generation, ten years today make an absolute difference. A second White House Conference in 1989 can be the catalyst for making specific the generalities of 1979.

A part of the 1979 conference was the rise of citizen's councils and strengthening of the Friends of the Library movement. Locally, at the state level, and nationally, these groups (generally with leadership from library professionals) have done much since 1979 to help get new money for services, buildings and automation. These people need to be prepared to advocate the funding needed for networking. We depend upon you, the experts, to put a national network together--developing the structure and incorporating new technology. The jurisdictional, geographical and funding barriers which must be overcome to make it work should be solved by you and by the boards created to do so. Involving on network boards users who are committed to overcoming the difficulties may help to sell the funding bodies and line up the needed financial and political support. Table 1 is a chart of where these people might be found.

Table 1

ORGANIZED LAY SUPPORTERS OF LIBRARIES

Who	Fostering Agency
NATIONAL LEVEL	
Public library trustees (local, state and national levels)	American Library Trustee Assn. ALA Headquarters
Friends of Libraries (public, academic and school; local, state and national levels)	Friends of Libraries U.S.A. ALA Headquarters
Citizens and librarians from the 1979 White House Conference and state preconferences; state librarians; new recruits working toward 1989 WHCLIS	WHCLIST (White House Conference on Library and Information Services Taskforce), 1700 E. Las Olas Blvd., Fort Lauderdale FL 33301
STATE LEVEL	
Trustees or commissioners of state library agencies and members, state LSCA advisory boards	State library agencies
State trustee or trustee/Friend groups (local and state levels--public libraries)	State library associations or independent in a few states
Statewide citizens' councils	State library agencies or independent in a few states
ACADEMIC	
Friends, trustees and/or advisory committees	University or college libraries, development offices, student and alumni associations
LOCAL LEVEL	
Trustees or advisory board members	Individual library, city or county library system, regional or multitype system
Friends of Libraries	Individual library, city or county library system

Table 1 (Continued)

ORGANIZED LAY SUPPORTERS OF LIBRARIES

SCHOOLS

Who	Fostering Agency
Parent-teacher association members	Individual school, school system
Library volunteer group	School librarian or principal

OTHER SOURCES

Local, state and national chapters of the League of Women Voters, Association of Junior Leagues, American Association of University Women, Chambers of Commerce and business and corporate users of libraries

NETWORKING QUESTIONNAIRE: SUMMARY OF RESPONSES

A questionnaire on roles, strategies, and barriers to networking was mailed to all NAC members before the December 1985 meeting. The questionnaire was developed around an accompanying definition of networking and list of basic premises underlying library networking, developed by the Program Planning Subcommittee. The answers were analyzed by Laima Mockus (nos. 1-3) and Carol C. Henderson (nos. 4-10). Following is a summary of the presentations of their analyses. (See Appendix A for a copy of the questionnaire).

1. Please describe your vision of nationwide networking. (15 responses)

    1) Many of the answers were mission-oriented statements that addressed the goals of networking:
        a) to provide access to all information to all individuals,
        b) to extend the benefits of networking to smaller libraries,
        c) to put individuals in direct contact with the information sought--the document itself,
        d) to provide access to the nation's information resources upon demand by the end user, not necessarily just through library intermediaries, and
        e) to provide convenient information access stations in airports, supermarkets, and homes.

    2) Other answers focused on the structure of nationwide networking:
        a) an interlocking series of local and regional networks,
        b) the linking of existing databases and systems,
        c) continued use and development of communications standards and adherence to national standards,
        d) bibliographic utilities and vendors interacting with networks,
        e) stress on technology,
        f) combination of systems needed to provide the data, and
        g) the technical interconnection.

    3) Two answers expressed the following opinions:
        a) informed consumers will search databases through different means to obtain the information needed, and
        b) personal computer technology developments might alter the vision of nationwide networking.

    In summary, it can be said that the vision as expressed by the respondents is similar, that provision for access to all information is the goal, and that all parties should have a role to play.

2. What is the best strategy for realizing this vision?

(14 responses)

1) General statements of strategy included the identification and definition of the players and economic issues:
    a) develop a national plan,
    b) work toward a partnership between LC and the other national libraries, bibliographic utilities, etc.,
    c) attain a commitment by various players together with leadership from LC, CLR, etc.,
    d) identify all the players,
    e) identify ways in which individuals seek information,
    f) develop databases, interfaces, gateways, or common command languages,
    g) assess the efficacy of current networking activities to determine where improvements are necessary, and
    h) work with those that limit access to information.

2) More specific responses included the impact of local systems, "for pay" services, and others:
    a) make local and regional networks cognizant of national standards,
    b) recognize the impact of local system technologies on sharing,
    c) observe "for pay" services,
    d) link document image technology with indexing systems,
    e) determine how to better inform the community, and
    f) realize that there cannot be a controlled national network.

3. What are the major barriers to realizing this vision? (14 responses)

    1) Specifically mentioned economic barriers included:
        a) telecommunications costs and technology costs,
        b) unequal allocation of resources,
        c) lack of awareness of existing resources,
        d) multiplicity of services, and
        e) duplication of efforts on small or local scale.

    2) Technological barriers identified included:
        a) creation of systems without attention to standards,
        b) multiple command languages and database structures, and
        c) rapidly changing technology.

    3) Among political/social barriers mentioned were:
        a) lack of a national plan, no common vision or converted advocacy,
        b) copyright and protection of investments,
        c) competition among entrepreneurial entities,
        d) shortsighted planning, and
        e) lack of knowledge of networking and its benefits.

The long-term survival of access to information is on everyone's mind and all agreed that the ultimate goal is to provide information to all citizens.

4. What should be the role of your institution (or the group of institutions you represent) in nationwide networking? (15 responses)

This question is hard to summarize. To a certain extent, responses from regional networks, OCLC, COSLA, etc., parallel responses to the questions about the roles of regional networks, utilities, state agencies, etc. But none of the other questions get at the role of associations or single institutions like USBE, for example. It's hard to characterize these answers without identifying respondents. It might be interesting to get permission and do a handout of responses to No. 4. Not everyone responded, however, and others emphasized theirs was a personal, not an institutional, response.

5. What should be the role of the federal government? (13 responses)

1) Most often mentioned was financial support of
   a) national libraries
   b) legislation such as LSCA, HEA, NEH
   c) cooperation generally
   d) research & development, preservation, standards

2) Next most often - encouragement, coordination, some policy development, of networking and sharing resources

3) Also a few mentions of access
   a) continue free flow of bibliographic information
   b) committment to access
   c) provision of and access to government information, data, databases
   d) partial support for pro bono services
   e) facilitate overcoming of information illiteracy

Responses assume limited but significant role for federal government -- continued existence and adequate funding of national libraries, agencies, programs, legislation -- not much beyond that.

5(a) What should be the role of the Library of Congress? (15 responses)

1) Producer and provider of bibliographic data - LC seen as backbone of bibliographic control structure

2) Pioneer and leader
   a) bibliographic tools & authority data as result of role in (1)
   b) standards
   c) research & development - technology, linked systems, etc.
   d) preservation
   e) chief holder of resources
   f) chief node in nationwide network

3) Coordinator of network participation & structure through
   a) national (agencies, institutions) & international cooperative agreements
   b) bringing together interested parties through forums like NAC

5(b) What should be the role of NCLIS? (15 responses)

1) There were many ways of defining NCLIS' role as a catalyst and facilitator, a forum for discussion and identification of issues, a planner and policy advisor to Congress and the President:

   Vocal supporter of concept, since they first brought forth in an organized way the concept of nationwide networking
   Channel for concerns of library and information community to federal government
   Identify gaps in network or underserved constituencies
   Listen to all voices; remind library community of existence and importance of other sectors of information world
   Foster development of planning for national programs relating to libraries and information resources
   Evaluate information services to entire nation; identify areas of need; assist appropriate agency/organization to develop ways to serve that need
   Advocate for networking
   Educate decision-makers
   WHCLIS II likely to focus on technology, networking

2) Less often mentioned were activities in standards, research, international agreements

3) Several respondents were uncertain about NCLIS' role in networking
   Not aware of their networking activity
   Needs to be doer as well as catalyst in order to increase its impact and visibility

5(c) What should be the roles of other federal agencies and branches of government? (13 responses)

1) Some have national library responsibilities such as NLM and NAL, or other national roles such as GPO; they should cooperate with LC on bibliographic programs.

2) Important components in a nationwide network; should maintain consistency with national planning for library networking.

3) Provide the broadest possible access to information and data about government or generated by federal agencies.

6. What should be the role of the state library agencies and statewide networks? (15 responses)

A few respondents differentiated between the agencies and the networks; most did not, and this summary does not differentiate.

1) Leaders and financial supporters in coordinating resources in all sizes and types of libraries within the state

2) Leaders in interconnecting resources in state to nationwide network, and responsibility to assure state networking efforts are compatible with nationwide network

3) Provide training

4) Foster equal access to library resources

A few interesting observations were made:

State agencies are uneven; where strong, they are major nodes in nationwide network.
In the future the state networks will emerge as the power spokes in the nationwide network wheel.
Negotiations for services of library automation vendors are most successfully done at regional level through multistate networks.
They facilitate implementation of agreements by bringing together an otherwise unwieldy multiplicity of libraries and information centers into composite units.
Issues: a) degree to which private or for-profit libraries are excluded; b) overall economic benefits for all libraries nationwide; c) continue means of sharing and cooperating beyond state boundaries.

7. What should be the role of regional networks? (14 responses)

1) Brokering and sometimes repackaging services of others (primarily but not exclusively OCLC) to reduce library costs and increase effectiveness

2) Training and support for services offered

3) Help develop local systems and databases

4) Assure compatibility with nationwide network (and to not encourage nonstandard local systems)

5) Encourage networking; bring smaller libraries in, etc.

Some additional comments:

Several noted that this is a transitional stage for regional networks.
They must expand beyond their OCLC role; take a more active role in serving regional needs.
They are an essential link to OCLC, assisting it to deliver services; they also provide advice to OCLC, and disseminate OCLC information.
Regional structures often reflect the actual flow of requests, materials, people. Regional structures rooted in state agreements

might have significant advantages.
They should participate in developing and implementing strategies to support pro bono services.
They could serve as a communication channel for NAC.

8. What should be the role of national bibliographic networks (sometimes referred to as bibliographic utilities)? (13 responses)

   1) Very important, some say most important, element in nationwide networking because of their huge databases which serve as merged catalogs for technical services, ILL, etc.

   2) Research and development (also serve as market consolidators) in areas of technology, systems, services, products

   3) Responsibility to cooperate for the good of all
      a) maintain quality of national online files
      b) full committment to reciprocal linkages
      c) excellence in executing bibliographic information should continue to be core
      d) core role should focus on sharing activities best done nationally such as ILL
      e) participate in international cooperative cataloging and sharing efforts
      f) develop use policies deemed satisfactory by all parties
      g) work on standards, avoid duplication

A few additional comments:

Their existing systems, programs and products are driving engines now, and their future directions will in many ways determine the future. Influence must be exerted to be certain they move in the right direction.

They will play an important but less dominant role. For most libraries and individuals, state networks will be adequate. Consultation of national networks will be limited to specialized research requests. Libraries will contribute unique records to national bibliographic networks for fees and will consult national networks for ILL after searching state or multistate network holdings.

Maybe they should offer end-user direct access through access stations, if local agencies do not develop such technology; a kind of online "USA Today."

9. What should be the role of the funding agencies? (13 responses)

   1) Most often mentioned was the funding of well-planned systems and projects which have a future in nationwide networking and do not march off in tangential directions
      a) be informed on network development to make choices for the greatest good

    - b) fund projects with impact beyond a single institution
    - c) assembling and providing funds for development of linkages among national bibliographic systems
    - d) seed money or pilot projects which will bring something to the point of implementation

2) Relevant research and development; dissemination of results
    - a) basic research on nature of information query
    - b) application of information technology

3) Access
    - a) promote access for libraries to networking
    - b) promote access for individuals to resources
    - c) support rational growth of pro bono services

10. Other comments. (3 responses)

Interests of all constituencies, including the private information sector, must be included in development of a national plan.

One might also consider what role professional organizations such as ALA, ASIS, and SLA might play in all this.

Special libraries cross over the boundaries of these areas -- national, federal, state, local, and private....Perhaps the networking vision will change altogether....as computer storage capacity in personal computers or laser disks, etc., increase to accomodate these mammoth databases.

SUMMARY OF WORKING GROUP DISCUSSIONS

Working groups were formed at the end of all presentations to discuss and amalgamate the many visions of nationwide networking and the roles of organizations, presented by the speakers. The working groups were asked to look at the overall vision, the barriers that have to be overcome, and the strategies needed to realize that vision.

Group I (Carol C. Henderson, recorder): The group's vision of networking foresees many more linkages by 1990. Each of the following elements already exists or is under way and will be more fully developed by 1990. Local libraries will be linked to utilities for two-way data transmission, and bibliographic utilities will be linked with each other. Local libraries will also be linked to other information sources, and there will be a shift from bibliographic databases to text databases. More online statewide databases will be created, and linkages between scholars and libraries will satisfy a computer-literate public with better information access. More international use of U.S. bibliographic utilities is expected. "Nonmediated" use of networks and information "use" by the general public will increase.

A number of barriers to achieving this vision of networking were identified by the group:

- today only about 7,000 of over 100,000 libraries are linked to major bibliographic systems,
- innovations (technology, standards, etc.) take time to spread and be widely accepted,
- regional networks' "economics" are influenced by bibliographic utilities and national libraries (not necessarily a barrier, just a fact of life),
- the decentralization trend may decrease access,
- "least-cost" solutions may decrease access to the larger world of resources,
- standards are not always adhered to,
- capital planning, especially after initial investment in automation or systems, is often insufficient,
- the prevalence of different systems in different libraries constitutes a barrier for users that will continue to exist even after linkages, and
- the "end user" or "informee" is not integrated into networking activities.

Henderson reported that the group had agreed upon eight strategies for realizing this vision and overcoming the barriers:

- recognize that not all trends can be changed,
- recognize that not all barriers need action by NAC,
- linkages are the realistic way to get compatibility,
- encourage linkages through appropriate mechanism at each level,

- encourage standards and systems compatibility,
- try to turn around some barriers (for instance, the trend to decentralization really increases interdependence),
- encourage improved library fiscal strategies for automation, and
- work at public awareness of networking activities; libraries need a new image to reflect their new role.

Group II (Betty A. Davis, recorder): The group's vision is to provide people with access to the widest range of information (both bibliographic and other) whenever and wherever needed. They see the future evolving into a network of networks. Group II presented the following list of strategies for NAC, which include specific responsibilities for its members. NAC members should:

- acknowledge their leadership role in nationwide networking,
- take whatever steps are necessary to ensure the long-term financial support of NAC, including increased clerical support for more timely communications,
- identify areas where research is needed and develop a research agenda,
- encourage funding of both mainstream and maverick projects relating to networking,
- identify and recommend strategies to overcome barriers to resource sharing such as
  1) lack of perceived value of cooperation,
  2) redundancy of efforts that depletes scare resources,
  3) lack of candor among NAC participants about programs and plans, and
  4) poor communication to NAC's constituents of the information and issues addressed at NAC meetings,
- identify and help solve the technological problems,
- institute an aggressive program (through and beyond NAC member organizations) of educating information professionals and the public in the vision and where they fit into it,
- be more aggressive in getting participation for the national network from private sector companies and libraries in addition to publicly supported organizations, and
- inform constituents of relevant standards and encourage conforming to them when feasible.

Group III (Joseph F. Shubert, recorder): The group concluded that technology has affected services and roles of libraries more radically than many perceive. It identified the following as conditions or unmet needs that shape its vision of networking: uneven access to information; technology's challenges to traditional library roles and services; new sets of players in networking; and fragmented technology's threat to cooperative accomplishments that are now taken for granted. The group's vision of nationwide networking was stated as "a system which provides to users on a timely basis the information they need at a price society and they can afford."

The group identified eleven strategies:

- continue operating with the concept of a network of networks,
- regard libraries as sources, make maximum use of resources,
- do not expect to force library participation, but use effective continuing education to help librarians and governing boards understand how local participation and support benefit them,
- develop standards, protocols, and policies,
- foster appropriate development of special purpose networks,
- enhance bibliographic file transfer and facilitate access to databases,
- bring under control material not currently under control, such as market research reports, and files,
- expand cooperation with publishers, information producers, and libraries,
- work with state library agencies to ensure systems that address needs of all people and all types of libraries,
- continue support of the three national libraries and expand state and federal support of networking, and
- pay attention to user needs, perceptions, and expectations.

Group IV (Toni Carbo Bearman, recorder): The group agreed with the goal of the National Commission on Libraries and Information Science (NCLIS):

> To eventually provide every individual in the United States with equal opportunity of access to that part of the total information resource which will satisfy the individual's educational, working, cultural and leisure-time needs and interest, regardless of the individual's location, social or physical condition or level of intellectual achievement.

To make progress toward the attainment of this goal, NCLIS has developed two major program objectives: (1) to strengthen, develop, or create, where needed, human and material resources that are supportive of high quality library and information services; and (2) to join together the library and information facilities in the country, through a common pattern of organization, uniform standards, and shared communications, to form a nationwide network.

The group feels this should be the ultimate goal for nationwide networking and agrees with the premises that were distributed in advance of the meeting; that nationwide networking will become a network of networks and that the network should not be monolithic, but bottom-up, top-down, and sideways.

Bearman reported that more players than before are needed to accomplish this goal, in both the public (federal, regional, state, local) and private (both for-profit and not-for-profit) sectors. The group agrees with roles as summarized in the questionnaire responses.

The structure of nationwide networking was seen to generate issues relating to:

- more linking of networks,
- standards (even more important),
- availability of more information resources,
- an even wider range of technological possibilities for improving information management, delivery, and access,
- coordination of parallel efforts to continue to work toward national goals,
- shift of perceived center for networking toward end user,
- economic issues related to networking (e.g., ownership, compensation for intellectual property, who pays, etc.),
- national programs to address major issues, such as collection development, preservation, retrospective conversion, etc., and
- increasing distribution of networking.

The group agreed on ten strategic points toward a nationwide network:

- keep NAC,
- continue forums to discuss cooperation among players (e.g., OCLC-RLIN),
- further define and explore players' roles,
- survey other groups to get their thoughts on vision and strategy,
- implement the Linked Systems Project (LSP) to the fullest; develop mechanisms to increase use of existing and developing standards,
- promote support for research and development on user behavior, technology, etc.; monitor technology to make the most effective use of it,
- further investigate the need for policy changes to make available radio spectra,
- provide briefing information on national networking activities on a regular basis,
- identify and discuss economic issues and work toward resolving them, and
- encourage support for national programs.

Bearman concluded the report of Group IV with a list of suggested future topics for NAC. They are: (1) clarification of roles of players, (2) identification of barriers, ways to overcome them, and benefits of networking, (3) economic issues, (4) research agenda, (5) strategies and their implementation, and (6) the perceived shift of center to end user.

OVERVIEW AND COMMENTS

Ronald F. Miller
Executive Director, CLASS

For this meeting of the Network Advisory Committee (NAC), the Planning Committee asked me to do two things: (1) to try to extract from the remarks of our speakers and the Committee members over the past few days a core of opinion about the state of library networking in North America, and (2) to add appropriate observations on the subject--whether they may or may not be needed. Our over-all goal is to discover if there is, in fact, something which we can agree to call an "emerging national network", (ENN) and if so what it looks like now and may become in the near-term future.

In addition to the remarks contributed by speakers and NAC members, I have drawn upon two other soures: the reports of a survey [1] composed by the Planning Committee and distributed by the NAC Secretariat this past fall to NAC members, and the monograph entitled, "Toward a National Program for Library and Information Service: Goals for Action" which was published in 1975 by the National Commission on Libraries and Information Science. [2]

I should say first of all that we have just heard a series of reports from small group discussions on the topic which seemed to show at least a core of common opinions and I feel it would be redundant to repeat them here. The publication which results from these deliberations will display them in several places. With this qualifier, I intend to identify the key players in the "ENN" and briefly describe their essential contribution to the ENN process as some of us see them. Then I will make a few observations about what forces seem to be at work which contribute to the shaping of the ENN. Please note that my remarks simplify as report, and therefore distort by being selective. I hope those of you who feel that your pet contribution has been slighted, will be graceful, at least, in your reaction.

THE PLAYERS

There are several types of organizations which have developed areas of primary action over the past ten years or so and taken together, they form a loose and somewhat haphazzard alliance of complementary actions which almost in spite of itself appears to be national-wide inscope. Before we look at the roles and relationships of these players, let's list some of the obvious types, then follow that list with examples and brief comments about the essential roles of each player.

1. Bibliographic Utilities (Public sector)
2. Bibliographic Utilities (Private sector)
3. National Libraries
4. Regional Networks
5. State Library Agencies
6. Local Systems
7. Publishers and Information Suppliers
8. Professional Societies and Associations
9. Others

1. BIBLIOGRAPHIC UTILITIES (PUBLIC SECTOR)

These organizations "traditionally" include OCLC, RLG, and WLN in the U.S., although none of their governing bodies rest easily with this label. They have viewed themselves as cooperative enterprises designed to serve libraries without a profit motive.

They have ploughed any surplus income back into development activities, or used it to stabilze or reduce prices. OCLC management appears to view itself as a world-wide enterprise, serving all types of libraries and related markets wth an ever-widening array of bibliographical and information processing products and services. It is the dominant public sector utility serving libraries in the U.S.

RLG, with its database access service, RLIN directs its primary effort toward major research libraries. Secondarily, RLIN services are available through a Regional network distributes its to most other libraries and archival organizations which may elect to participate within that environment anywhere in the U.S. As such, it has identified itself with the research library community as a specialized endeaver which is driven by the bibliographic control needs and financial support of its owners.

WLN has steadfastly pursued a geographically regional focus, although versions of its system have been adapted for individual institutions and groups of libraries located both in North America and other countries. It appears that WLN management will continue that orientation and try to maintain and intensify its role as the bibliographic utility of the Pacific Northwestern Region of the U.S., while maintaining cooperative development arrangements with its licenses and its commericial distributor.

These three organizations, with facilitation provided by the Council on Library Resources, have made some progress in sharing records in recent years, with strong support and participation of the Library of Congress.

2. BIBLIOGRAPHIC UTILITIES (PRIVATE SECTOR)

This group contains a large number of vendors. Some of them look like OCLC, RLG, and WLN (UTLAS is an obvious example); others have emerged from the Abstrating and Indexing (A&I) traditions of information access. The latter group includes, for example, general information access services, such as Dialog, BRS, and SDC Search Services. These companies can be characterized as providing online user access to information produced by others. Dozens of specialized services which promote access both through libraries and directly from end-users include Mead Data Central, Dow Jones, New York Times Information Bank, Vu-Text and Wilsonline.

Beyond these utilities, range various mutations and combinations of the above services which promote electronic communication without (necessarily) a data base focus at all: Compuserve, the Source, Delphi, Dailcom and OnTyme. In terms of the numbers of people who use such online services, the private sector utilities far out-strip most other technical components of the emerging network, and the line of demarkation between the National "LIBRARY" Network portion of a national "INFORMATION" network, blurs.

3. NATIONAL LIBRARIES

We mean the Library of Congress (LC), the National Library of Agriculture (NAC) and the National Library of Medicine (NLM).

LC has taken the most visible leadership role with respect to promotion of resource sharing and cooperative action among the broadest group of libraries--academic, public and selected special libraries. As the source of MARC records and other important bibliographic control products. LC continues to provide a major resource to library network building in the U.S. and elsewhere. As one of four major library networking components in the U.S., we can observe that the three bibliographic utilities plus LC appear to have made some serious strides to integrate, through linkages, some of the capabilities of each toward a large purpose--a tedious and complicated technical as well as political process. The Link Systems Project (LSP) is the most obvious example of this cooperative enterprise. Bibliographic control records are beginning to flow between some of the participants.

The NAC and NLM have, from my perspective at least, pursued essentially goals and development pathways which are independent of each other as well as LC, since each of these agencies are, by law, committed to serve fairly well-defined constituencies outside of the federal library community. Records from both organizations and their attendant communications networks have, along with the Goverment Printing Office and other agencies, been fed into various utilities both in the public and private sectors. It is not obvious, however, just what their roles are as components in the ENN other than to serve their constituents within the terms set by law. They are essentially suppliers of information through whichever technological means are economically available, including the private sector bibliographic utilities. The useful coordination and service function among these and other agencies is provided by the Federal Library and Information Center Committee (FLICC).

4. REGIONAL NETWORKS

There are about 17 regional networks which blanket the U.S. in various shapes and sizes. NELINET, AMIGOS, BCR, CLASS, and INCOLSA are examples. (To keep things simple, for our purposes, we are not including intra-state regional networks (e.g. the various 3 R's groups in New York) in this quick look. Most, if not all, are related to one or more of the bibliographic Utilities (both public and private sector) in that they provide training, representation and services mostly related to them, for a regional or state-wide constituency. These groups tend to serve as "user-friendly front-ends" for other service providers. Some, like CLASS and AMIGOS, provide some of their services nation-wide, and some, like SOLINET, have taken on some functions offered directly by bibliographic utilities too.

5. THE STATE LIBRARY'S AGENCIES

The main functions of the various state library agencies in the library bibliographic component of the emerging national network are to fund and coordinate local library services in a state-wide context. Their over-riding goal seems to be to try to preserve equality of access so that our "information economy" does not become driven solely by market forces. They, along with federal backup policies and funds, have long been the promoters of services to the unserved and to the poor.

Some state library agencies have, in fact, either operated as regional networks (ILLINET) or facilitated their funding (INCOLSA). With the help of federal (LSCA) funds, particularly Title III, and some state appropriations, these agencies have promoted the spread of electronic networks within and among states. Although there is a wide diversity of support among the various state library agencies, they share their problems and successes in the Council of State Library Agencies (COSLA) which has, like NAC, helped the spread of network development.

6. LOCAL SYSTEMS

This category of component in the ENN seems to be the most volatile, since it includes not only circulation systems installed by individual libraries, but stand-alone catalog ing support system and multi-institutional online catalog systems, among other things. Generally speaking, "vendors" in this category include CLSI, Geac, Northwestern University's NOTICE system, Virginia Poly Tech's VTLS system, UTLAS' Alice III, and OCLC's LS2000, BroDart's "Le Pac" CD-ROM catalog, Gaylord's Bibliographic Processing Network, and the Library Company's Bibliofile. To these examples can be added the non-exported home-grown systems such as SOCRATES (Stanford), Melvyl (Univ. of California) and GLADYS (U.C. Berkeley).

An interesting characteristic of these offerings is the current rush to integrate them with other systems through various interfaces. For instance, several vendors of circulaton systems claim the ability to connect to various utilities as a way to integrate local with regional "stand-alone" systems with bibliographic utilities. The CLSI LIBS 100 can, for instance, accept OCLC cataloging records as imput to local circulation control modules and online catalogs.

7. PUBLISHERS AND INFORMATION SUPPLIERS

Traditionally considered by some as a conservative element in technological advancement, some publishers (which are after all suppliers of the stuff from which libaries are built) encourage online book ordering, serials claiming, and fund accounting through various communications links and networks. Some even have joined with both types of bibliographic utilities and electronic mail vendors to facilitate this process by offering online connections to their library market.

The A & I publishers, however, have been in the forefront of online data base access, and are seen as promoters of various stand-alone local systems based an digital optical disk and CD-ROM technology. Several new CD-ROM ventures are in the works and may well present new challenges and opportunities to libraries for providing access by their patrons to relatively non-volatile information.

They, as well as others, are serious participants in various standards groups as a way of expediting data transfer and inventory control. These efforts, such as ISBN and ISSN not only facilitate the movement of information from producer to user, but help the utilities and local systems to contribute to that process as well because they also are beginning to make use of the standards in their computer control systems.

8. PROFESSIONAL SOCIETIES AND ASSOCIATIONS

Several of these groups are represented at meetings of Network Advisory Committee. The American Library Association (ALA) the American Society for Information Science, (ASIS) the Association of American Publishers (AAP), the Association of Research Libraries (ARL), the Information Industry Association (IIA), the Medical Library Association (MLA), the National Federation of Abstrating and Information Services (NFAIS), the Special Libraries Association (SLA), and the American Assocation of Law Libraries (AALL) illustrate the breath of interest and involvement in national library network issues in this committee.

Their roles, I submit, are essentially to foster communi cation and, on occasion, concerted action on behalf of their members. By disseminating our deliberations, for instance, these groups can transmit and foster discussion of issues which have come before us, and widen the national discussion of library and information networking issues. Several of the issues (public/private interface, information economy, standards, regional network services, cooperative opportunities) which the NAC has focused upon have been debated in the journals and annual meetings of these NAC members. And conversely, some issues (copyright and data ownership, for instance) have come to us from those forums as well. By helping us all to communicate and understand the concerns of each constituency, we are better able to develop cooperative opportunities which foster nationwide library network development.

9. OTHERS

There are, of course, other players and components, which contribute to the growth and energy involved in implementing a voluntary national library network "on the fly". The National Commission of Libraries and Information Sciences (NCLIS), one of the three institutions to which the NAC is officially advisory, plays important roles as idea synthesizer, of policy formation, and consensus building. It is particulary sensitive to the diverse points of view of the library and information community, both public and private, and commmunicates those concerns to others who may be in a position to deal with them.

And of course, we cannot omit local library and information service outlets: those institutions closest to our ultimate users, the consumers of our services. The small daily cumulative and collective decisions which their individual managements make, drive most other components of the network, particularly system suppliers and networks. Not withstanding an entity's commercial or "public, not for profit" status, it is this market acting with some sense of common purpose which appears to determine what the emerging network will become.

OBSERVATIONS

Some of the memorable ideas and observations which emerged from our discussions seemed to elicit some nods of agreement from attendees. These are noted as follows:

ERRATA

Please insert in Network Planning Paper No. 13, Toward a Common Vision in Library Networking, between pages 82 and 83.

1. In 1975, when "Goals for Action" [2] was published, a major preoccupation of the participants in that process was how a nationwide library network should be governed. At today's meeting, we seemed to assume that top-down formal management of any nation-wide library network, with coherent planning, funding and control is not appropriate for America now. Maybe our fierce individualism or bullheadness will always undermine centralized governmental efforts to impose nation-wide solutions on local situtations. In 1975, we also shared our concern that some bad effects can result from the ill-considered application of such technology: invasion of privacy, information "filtering", and economic screening of user access are just a few of the public policy issues which should get serious attention. Today, although we recognized our uneasiness about declining access to federally-generated information, we focussed mainly upon technical issues and their impact on library network development. The change in focus is interesting. In 1975 we worried about structure and control; today we seem to be more concerned with the kind of control which technology may allow us to have over our information services.

2. We asserted that a pre-eminent goal of the Emerging National Network is to increase user access to information, but we didn't say much about the economics involved in working toward that goal, except to observe that cost of library and computer processing is declining, but that bi-directional communication costs are increasing. These observations seem to lead toward a resurgence of local systems which minimize dependence upon large network telecommunications, unless cheaper communication techniques are explored and implemented by library networks.

3. There seems to be some hope that packet radio and small dish bi-directional satellite systems will intrude into the domain of telephone utilities in the years ahead. If true, the earlier goal of network of shared control and distributed processing could continue to mature, and counter the growing interest in purely local systems. The problem appears to be, who is doing the research on this technology for public domain libraries?

4. Some of us noted with some distress that there appears to be a a trend toward small local systems to perform functions which utilities have been developed to do. The distress comes from a concern that as such systems evolve that the capability, the commitment, on the part of library managers to share resources beyond the local "community" will decline, driving unit costs for central services higher.

5. There also seems to be a growing emphasis on complicated contracting, and its attendant overhead expense, rather than simple trust between institutions and suppliers. The day of the simple "handshake" contract seems to be over for many organizations. One

cannot help but observe that the mass media have already pointed out that the amount of litigation in the U.S. is almost out of control, driving insurance rates way beyond reason. Contracts, some say, are supposed to help minimize litigious situations. They may, in fact have just the opposite effect.

6. Some of us observed that we're focused upon networks for the literate and well-educated; the more energetic segment of our population which already uses libraries and information services. A related and equally important observation that our information delivery technology and how it's paid for amplifies the gap between the "inforich" and the "infopoor". The business community, for instance, seems to be getting the cream of the information delivery systems because that market appears willing to pay for it, and define market prices for information access.

7. As the network emerges, we seem to be realizing that our libraries and networking institutions are in a permanent state of evolution. That is, our network will never fully emerge and be finished; we'll merely be able to describe its parts better, but not control the process very well.

8. "Integration", "linkage", "gateways", are words we've heard here a lot. These concepts make it possible for institutions not to "feel guilty about not cooperating for the public good," because such local systems were selected locally for purely local considerations and short term benefit. Although, no on says that they are filling in the blanks of someone else's grand design for a national network, but some enterprises have perceived that local system integration is a marketable service. They have produced products which are intended to accomplish it. For example: Innovative Interfaces, Gaylord/LSSI, the Irving Project (Colordo) and the Regional Telecommunications Support (RTSS) project (California have demonstrated that local systems need not be excluded from subsequent involvement in larger networks and cooperative agreements.

9. Library and network managers are offered more choices to achieve their automation goals than ever before. In some instances, the array of choices is bewildering. An opportunity for a fairly small group library automation consultants to influence local choice either in support of, or undermining to, larger networking goals. Consultants seem to be quite influential in shaping local and regional networking components of the emerging national network. For example: if a consultant advises a library to drop participaton in a bibliographic utility in favor of a "cheaper" local stand-alone system, the utility is weakened. That is not to say that it is the "wrong" thing to do; it merely points up another factor which shapes the future of the ENN.

10. There are a series of forces and counter forces, or vectors,

which seem to be operate simultanteously and with differing resulantants. These forces emerge from several contexts: dependent upon where library institution is located geographically, the type of library it is, whether it is public, commerical or academic, its clientelle, wealth, relationships with neighboring libraries, etc.

For instance: some library managers are strong advocates of purely local, insular solutions while others are devoted to shared technical solutions to library and information problem. A library which chooses OCLC to help it reduce its book processing and cataloging expense takes the institution in one direction, whereas another which selects Bibliofile takes it in another direction.

11. The choices which library managers have (as well as their parent institutions) to improve their services or control the costs of their delivery are wider now than they ever have been. One positive effect which these choices offer is that a manager can buy into local, regional, national and international networking piece-by-piece and can begin that process from different points in the technology. For instance, starting with circulation control, a manager can buy into gateway access to neighboring systems, lay on an online catalog and set up online connections to look jobbers. Or the manager can start with a bibliographic utility to support cataloging, then put that data into a local cataloging syste, circulation system, and gateway to online reference systems. No matter where one starts, one can eventually interconnent to the larger ball of twine.

12. We must remember though, the intriguing observation of Eugene Damon in his presentation that "Networks are creating the illusion that anyone can share resources with anyone." He's right, anyone can't, and it's good to remember that. Furthermore, although various public agencies continue to profess goals which offer that is our their long-term intention, these are powerful economic, political and organizational forces which won't let it happen--at least in my life-time.

13. Cooperation for its own sake seems to be a rare commodity in network development these days, unless it is underpinned with economic advantages for the cooperating parties in some equitable measure. Several speakers observed that cooperatives and regional networks must be responsive to their member/customers in much the same way that sucessful businesses must be. If local systems satisfy local needs, it is becoming difficult for their managers to give much to help other institutions "free-loaders" in a cooperative context. Yesterday, Betty Davis confirmed which may be perceived as this concern with her pointed question: "Will records flow (among libaries and networks when local systems grow?

CONCLUSION

In conclusion then, I think we can safely say and agree that we do have a emerging nation library and information network in the United States. And we have also learned that whatever it is today, it is experienced differently by each person and each organization represented in this room and it is in a permanent state of fux and re-definition. Like the metanoic organization which, as Roland Brown observed, shapes itself, we can join with Robert Frost and "dance around in a ring and suppose, while the secret sits in the middle and knows."

REFERENCES

[1] "Questions for the library of Congress Network Advisory Committee" NAC Program Committee, November 1985

[2] Toward a National Program for Library and Information Services: Goals for Actions". National Commission on Libraries and Information Science, 1975.

BUSINESS SESSION

The business portions of the December 1985 Network Advisory Committee (NAC) meeting were held at the beginning and at the end of the program session of the meeting. The following summary combines these into one report.

Henriette D. Avram, the chairman of NAC, opened the session with the announcement that a report of recent NAC activities would be presented at the American Library Association's Midwinter meeting in Chicago. The program, planned for January 21, 1986, will center on issues concerning nationwide library network developments, the vision of a nationwide network, a national position on network development, and identification of the moving players in 1990 in such a network. Avram also reported briefly on the Gramm-Rudman-Hollings Balanced Budget Act, under which the Library of Congress will have to cut its budget by $9.8 million. Processing Services' share of that amount is $2.2 million. These cuts are added to reductions imposed by the Congress in the fall of 1985 when the Library-wide fiscal 1986 appropriation was reduced $8.4 million below the fiscal 1985 funding level. The two combined cuts come to over $18 million for the Library. The Library will have to reduce its work force of 5,200 by approximately 300 employees.

Continuing on a more positive note, Avram recommended that the audience read the history of NAC's first decade as a reminder of how much was accomplished in that period. The history and proceedings of the May 1985 NAC meeting, issued in the Network Planning Paper series as numbers 11 and 12, respectively, were available at the registration desk, together with a status report covering Processing Services' latest automation activities.

Mary Ellen Jacob, the chairman of the Communications Subcommittee, reported on the work done by the committee to ensure wider dissemination of the results of the NAC meeting deliberations and its published proceedings. The Cataloging Distribution Service (CDS) of the Library of Congress sends review copies of each new Network Planning Paper (NPP) to a number of editors of U.S. and foreign professional journals for review. Earlier lists were reviewed by the committee members and updated by the secretariat. This resulted in an up-to-date and well targeted number of potential reviewers. At the same time that a new NPP is announced in the LC Information Bulletin, CDS distributes more than 8,000 individual announcements of the new NPP to its library customers. These activities, supported by the Library, ensure wide distribution of the published proceedings of NAC meetings. Jacob reminded all members of the responsibilities of the Communications Subcommittee. They are: (1) to periodically review the lists of announcements and review copies for new NAC publications and (2) to identify, in cooperation with the Chief Officers of State Library Agencies (COSLA) and regional networks, means of communicating more

effectively with state and regional constituencies to report on the attended NAC meeting to the organization they represent.
The recommended mechanisms are to:

- ensure that meeting summaries appear in relevant newsletters,
- prepare reports or presentations to sponsoring organizations, and
- assist NAC and the Communications Subcommittee in identifying appropriate communications channels.

All agreed with the outline of the responsibilities of the Program Planning Subcommittee, provided by the chair of NAC that each Program Planning Subcommittee be actively involved in the following:

- planning and presenting programs,
- preparing and distributing issue summaries before the meeting,
- ensuring that a summary of the meeting is prepared and distributed promptly,
- ensuring that a white paper or network planning paper describing the meeting and its results is prepared, and
- arranging reports at professional meetings on the program.

The report by the chairman of the Membership Subcommittee, Toni Carbo Bearman, was brief. One application for NAC membership was received from the University of California's Division of Library Automation (UCDLA). The application will be discussed at a full NAC membership subcommittee meeting during ALA's Midwinter meeting. Bearman also reported on activities of the Statistics Subcommittee. NCLIS prepared summary statistics based on several sources and issued them in the October 15, 1985, issue of Library Journal. Bearman handed out copies of the summary and pointed out that chart 7 was incorrect. She hopes for comments from readers of the LJ article to be considered for inclusion in a revised version. She advised NAC members to check "their numbers" to the best of their knowledge. Data on special libraries are rough estimates only, mostly because that information is considered proprietary.

C. Lee Jones, representing the Council on Library Resources, gave a status report on the progress of three Bibliographic Service Development Program (BSDP) projects. (1) Fifty authors, participating in the electronic manuscript project, coded their manuscripts for evaluation by the Association of American Publishers. Guidelines and a code book have been prepared and will be published by the University of Chicago Press. The codes may become National Information Standards Organization (NISO) standards. (2) The OCLC-/Forest Press project to evaluate the Dewey Decimal Classification System for use as an enhancement to subject searching in an online catalog is nearing completion. (3) The record flow between the Research Libraries Group (RLG) and LC via the Linked Systems Project (LSP) is soon to become bidirectional. OCLC is expected to begin its participation by mid-1986. Western Library Network (WLN) participation is expected later. Two LSP committees --technical and policy--have been formed to look into consistent protocol implementation and what data will flow over the link, which records exchanged, accounting issues, and the timing of implementation.

Jones stated that CLR has been involved for almost thirty years with various library projects, concentrating much effort during the past seven years on the bibliographic component of library automation. BSDP will be incorporated into a larger program area, library operations. Many other areas need special attention: Preservation is to receive high priority attention in the near future. He reminded the audience that Martin M. Cummings' study on the economics of networking will be published as number one in the CLR Research Publications series in late spring 1986. [Cummings' presented a report on a CLR sponsored meeting on the economics of research libraries at the November 1984 NAC meeting on the information economy. His paper was included in the published proceedings of that meeting. (Network Planning Paper no. 10). Ed. note.]

At the end of the program session, NAC considered topics for the next meeting, to be held July 9-11, 1986. Based on the common vision of networking articulated at this meeting, NAC members should, during the next meeting, discuss issues and opportunities in networking in the following areas: (1) links and resource sharing, (2) standards, (3) education, (4) public policy, and (5) economics. Avram asked Mary W. Ghikas to chair the new Program Planning Subcommittee, whose membership will include David H. Brunell, Bette Dillehay, Thomas DiRenzo, Mary Ellen Jacob, and Henriette D. Avram. The meeting adjourned at noon on December 11, 1985.

APPENDIX A

DEFINITION OF NETWORKING

and

BASIC PREMISES UNDERLYING LIBRARY NETWORKING

for the December 9-11, 1985 Meeting
of the Library of Congress Network Advisory Committee

Definition:

Networking is a vehicle to assure that the nation's libraries and other information providers can, through the assistance of technology, meet the needs of library users through an appropriate combination of:

1) local resources, and
2) state, national, and international resources

Basic Premises:

1. Sharing of resources among libraries is necessary to meet library users' needs.

2. The ability to share resources to meet library users' needs depends on the continued participation and willingness of libraries to cooperate.

3. Evaluation of short term advantages of local networking must take into account the total framework of resource sharing upon which libraries must inevitably draw.

4. It is neither efficient nor economical for every library to duplicate the effort involved in certain functions, such as original cataloging.

5. Technology has made possible rapid and efficient delivery of information, including bibliographic data and data about the location and availability of library resources.

6. Networking promotes the most efficient and effective use of rapidly developing technology.

QUESTIONS FOR THE LIBRARY OF CONGRESS
NETWORK ADVISORY COMMITTEE

1. Please describe your vision of nationwide networking (see definition enclosed)

2. What is the best strategy for realizing this vision?

3. What are the major barriers to realizing this vision?

4. What should be the role of your institution (or the group of institutions you represent) in nationwide networking?

5. What should be the role of the Federal government?
   a) What should be the role of the Library of Congress?

   b) What should be the role of the National Commission on Libraries and Information Science?

   c) What should be the roles of other Federal agencies and statewide networks?

6. What should be the role of state library agencies and statewide networks?

7. What should be the role of regional networks?

8. What should be the role of national bibliographic networks (sometimes referred to as bibliographic utilities)?

9. What should be the role of funding agencies?

10. Please add any other comments you wish to make.

APPENDIX B

LIBRARY OF CONGRESS NETWORK ADVISORY COMMITTEE

Chair: Henriette D. Avram

Meeting, December 9-11, 1985
The Georgetown Hotel
2121 P Street, NW, Washington, DC 20037

AGENDA

Monday, December 9	Event
5:30 - 8:00pm	Registration/Reception/Dinner
8:15 - 9:30pm	**BUSINESS SESSION** Presiding: Henriette D. Avram
	o Communications Subcommittee report Mary Ellen Jacob, OCLC
	o Membership Subcommittee report Toni Carbo Bearman, NCLIS
	o Statistics Subcommittee report Toni Carbo Bearman, NCLIS
	o Council on Library Resources BSDP semi-annual report C. Lee Jones, CLR
	o Library of Congress Processing Services' semi-annual report on automation activities Henriette D. Avram, LC

Tuesday, December 10	Event
9:00 - 9:15am	**PROGRAM SESSION** Chairman's Welcome Henriette D. Avram
	Introduction to Program Session Frank P. Grisham, SOLINET, Chairman, Program Planning
9:15 - 9:45am	JoAn S. Segal, ACRL/ALA Setting the Stage (Summary of keynote paper) Question and answer period

90

Note: In the panel sessions following, each speaker will give his vision of the nationwide network and the role of the organization he represents in that network. Question and answer period after each presentation.

9:45 -10:45am	Panel I (Presiding: Toni Carbo Bearman) Introduction of speakers Bibliographic utilities: Rowland C.W. Brown, OCLC, Inc. Richard F. McCoy, RLG, Inc.
10:45-12 noon	Panel II (Presiding: Joseph F. Shubert) Introduction of speakers National libraries: Henriette D. Avram, LC Regional networks: Louella V. Wetherbee, AMIGOS State libraries: James A. Nelson, Kentucky Dept. of Libr. & Arch.
1:15 - 3:30pm	Panel III (Presiding: Betty Davis) Introduction of speakers Private sector: Charles Bourne, DIALOG Information Services, Inc. Eugene Damon Geac Computers Inc. Local systems: James F. Govan, Univ. of North Carolina Edwin D. Brownrigg, Univ. of California, Berkeley Users: Barbara Cooper, WHCLIST
3:30 - 3:45pm	Laima Mockus, NELINET and Carol C. Henderson, ALA Summary of all NAC questionnaires
3:45 - 5:30pm	Working group assignments and discussions of working groups

Wednesday, December 11

9:00 -10:15am	Group leaders of working groups report to full committee
10:15-11:15am	Ronald F. Miller, CLASS Synthesis of program session and working groups results Discussion period
11:15-12:00	**BUSINESS SESSION** Presiding: Henriette D. Avram o Discussion of action(s) o Next NAC meeting and topic
12:00	ADJOURN

NETWORK PLANNING PAPERS

No. 1 Butler, Brett. A Nationwide Location Data Base and Service. (Washington, Library of Congress, 1978). 66 p.

No. 2 Dataflow Systems. A Glossary for Library Networking. (Washington, Library of Congress, 1978). 34 p.

No. 3 Buchinski, Edwin J. Initial Considerations for a Nationwide Data Base. (Washington, Library of Congress, 1978). 56 p.

No. 4 Network Technical Architecture Group. Message Delivery System for the National Library and Information Service Network: General Requirements. (Washington, Library of Congress, 1978). 35 p.

No. 5 Long, Philip L. Study of Message Text Formats: Bibliographic Search Queries. (Washington, Library of Congress, 1979). 28 p.

No. 6 Vondran, Raymond F. National Union Catalog Experience: Implications for Network Planning. (Washington, Library of Congress, 1980). 51 p.

No. 7 Document Delivery--Background Papers Commissioned by the Network Advisory Committee. (Washington, Library of Congress, 1982). various pagings.

No. 8 Public/Private Sector Interactions: The Implications for Networking. (Washington, Library of Congress, 1983). 48 p.

No. 9 Electronic Information Delivery Systems: Proceedings of the Library of Congress Network Advisory Committee Meeting, April 18-20, 1984. (Washington, Library of Congress, 1984). 79 p.

No.10 The Information Economy in the U.S.: Its Effect on Libraries and Library Networks: Proceedings of the Library of Congress Network Advisory Committee Meeting, November 14-16, 1984. (Washington, Library of Congress, 1985). 59 p.

No.11 Maruyama, Lenore S. The Library of Congress Network Advisory Committee, Its First Decade. (Washington, Library of Congress, 1985). 50 p.

No.12 Key Issues in the Networking Field Today: Proceedings of the Library of Congress Network Advisory Committee Meeting, May 6-8, 1985. (Washington, Library of Congress, 1985). 88 p.

Available from the Customer Services Section, Cataloging Distribution Service, Library of Congress, Washington, D.C. 20541.